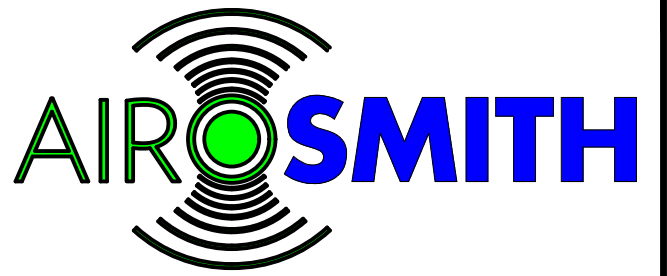


- NOTES**
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 2. CONTRACTOR SHALL MAINTAIN A 10'-0" MINIMUM SEPARATION BETWEEN THE PROPOSED GPS UNIT, TRANSMITTING ANTENNAS AND EXISTING GPS UNITS.



5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120



AIROSMITH DEVELOPMENT
AIROSMITH ENGINEERING
318 WEST AVE.
SARATOGA SPRINGS, NY 12866

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JLM	JLM	ASW

RFDS REV #: N/A

PRELIMINARY DOCUMENTS

SUBMITTALS		
REV	DATE	DESCRIPTION
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A&E PROJECT NUMBER
DISH NJ 202201

DISH Wireless L.L.C.
PROJECT INFORMATION

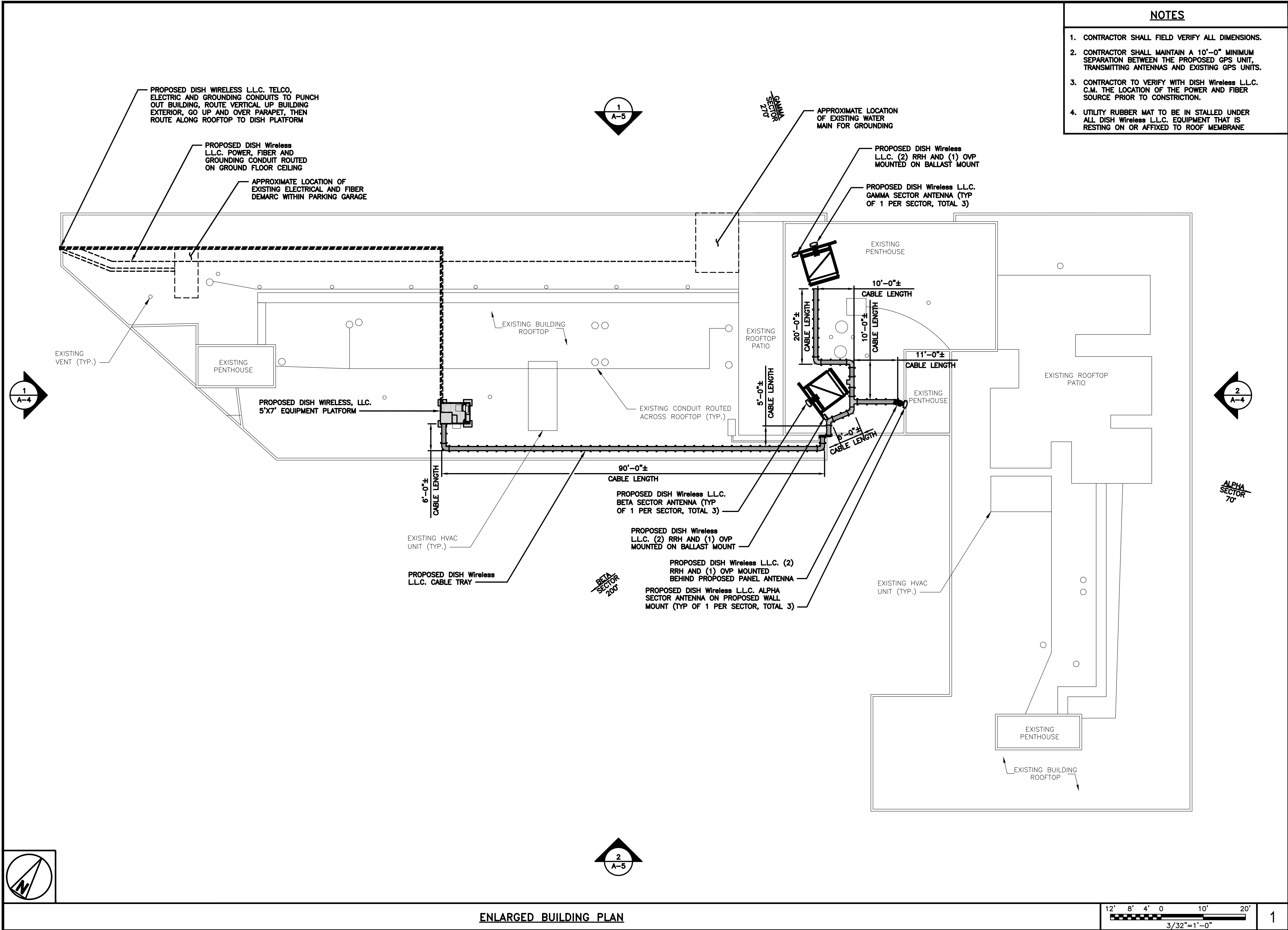
NJER01881D
234 SUYDAM AVENUE
JERSEY CITY, NJ 07304

SHEET TITLE
OVERALL
SITE PLAN

SHEET NUMBER
A-1

OVERALL SITE PLAN

16' 12' 8' 4' 0' 16' 32'
1/16"=1'-0"

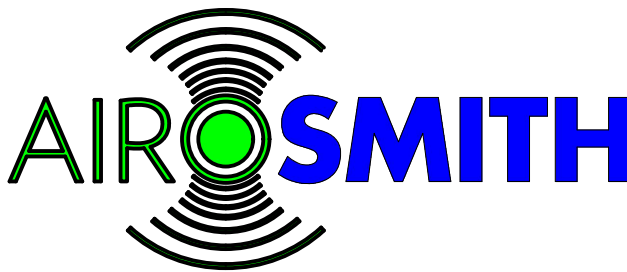


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- 3. CONTRACTOR TO VERIFY WITH DISH Wireless L.L.C. C.M. THE LOCATION OF THE POWER AND FIBER SOURCE PRIOR TO CONSTRUCTION.
- 4. UTILITY RUBBER MAT TO BE IN STALLED UNDER ALL DISH Wireless L.L.C. EQUIPMENT THAT IS RESTING ON OR AFFIXED TO ROOF MEMBRANE



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LITTLETON, CO 80120



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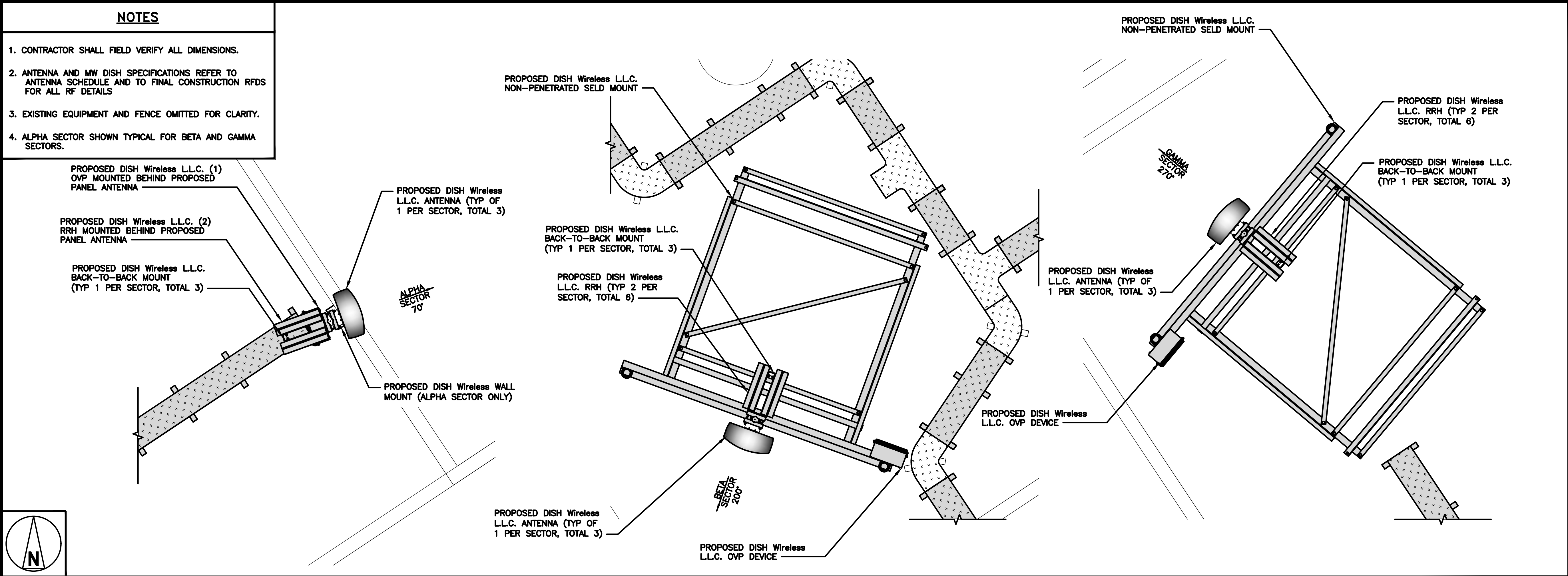
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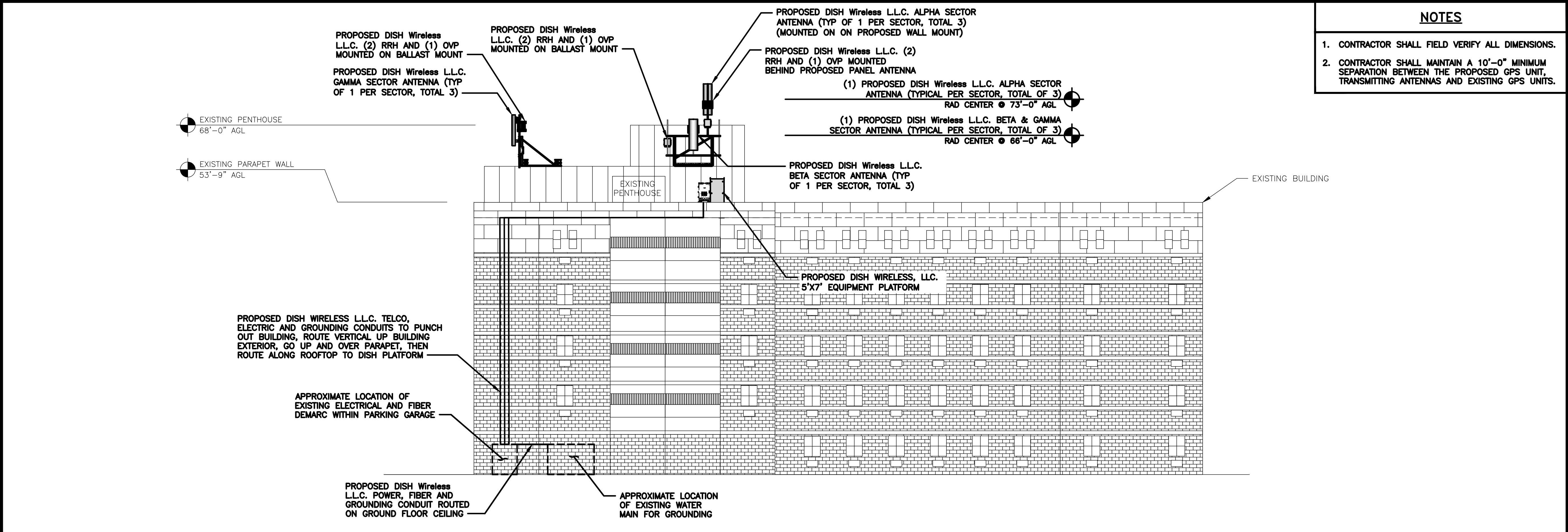
NJJER01881D
234 SUYDAM AVENUE
JERSEY CITY, NJ 07304

SHEET TITLE
ENLARGED BUILDING
PLAN

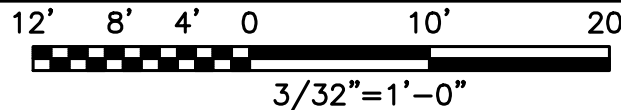
SHEET NUMBER

A-2





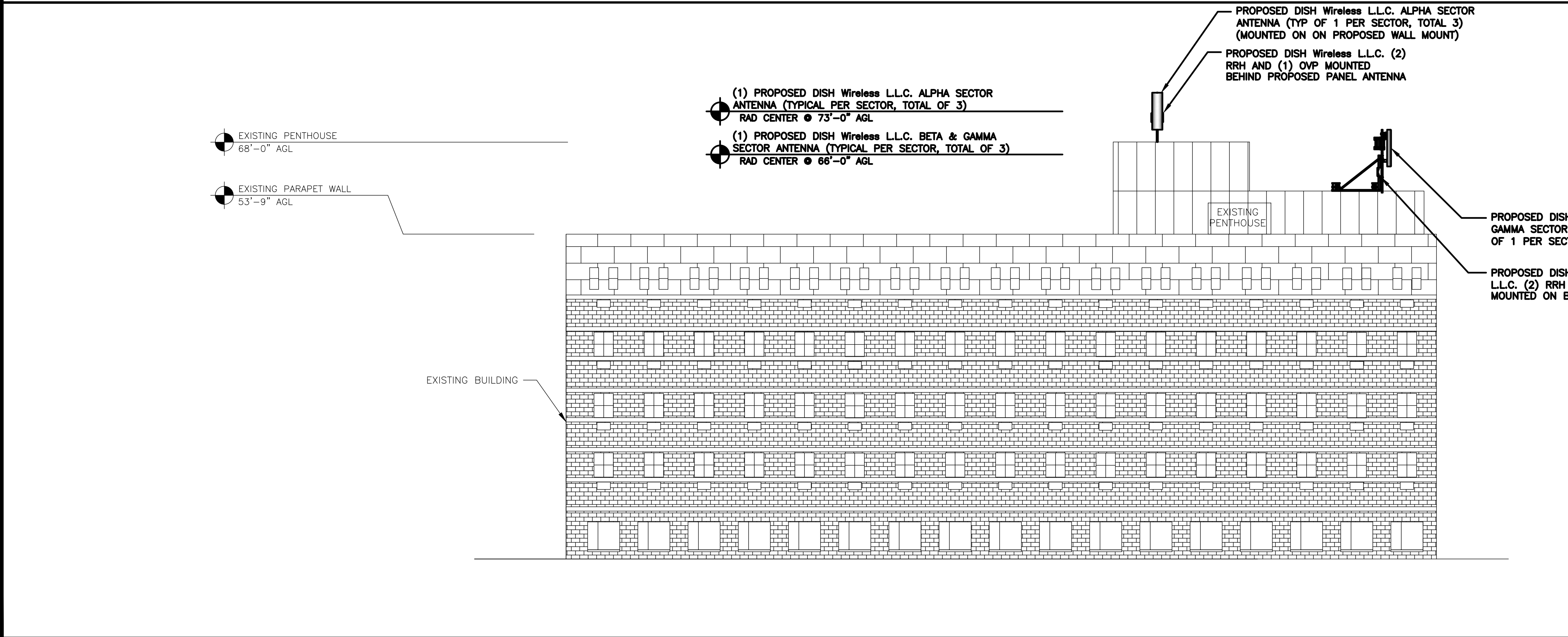
BUILDING WEST ELEVATION



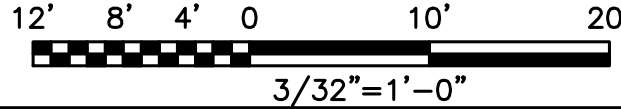
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BUILDING EAST ELEVATION



2

NOTES

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LITTLETON, CO 80120



AIROSMITH DEVELOPMENT
AIROSMITH ENGINEERING
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PRELIMINARY DOCUMENTS

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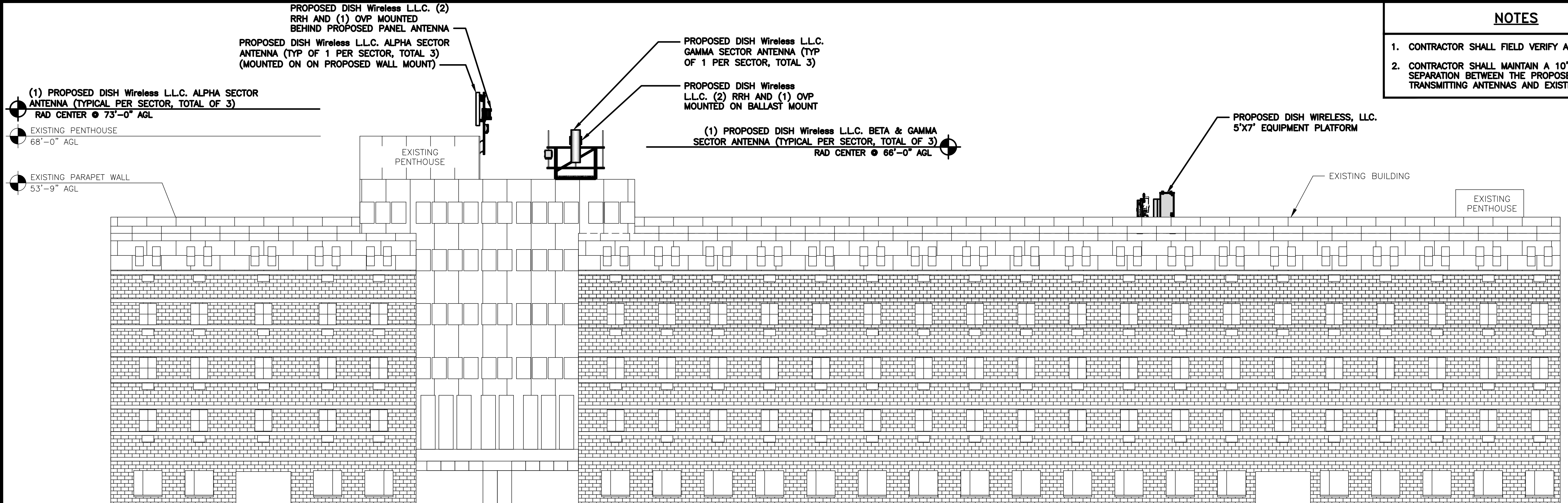
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DISH Wireless L.L.C.
PROJECT INFORMATION

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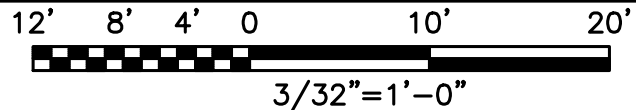
SHEET TITLE
WEST AND EAST
ELEVATIONS

SHEET NUMBER
A-4

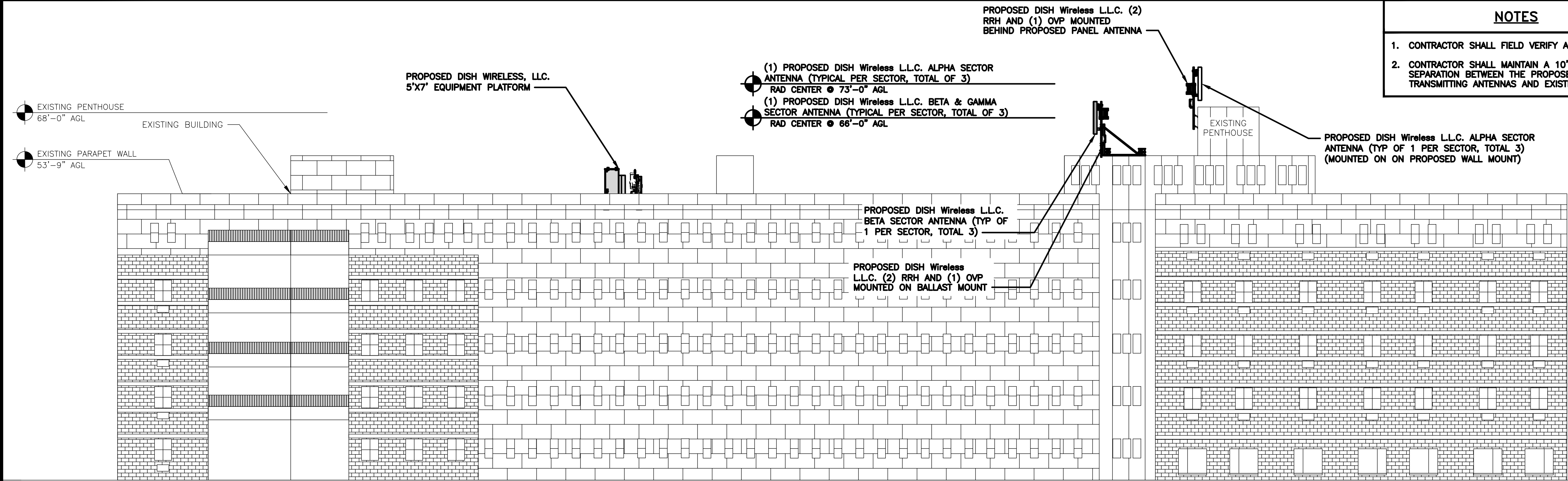


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BUILDING NORTH ELEVATION

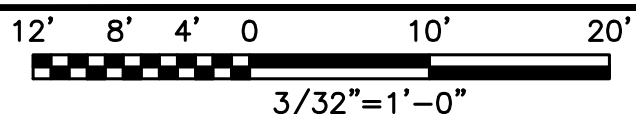


1



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BUILDING SOUTH ELEVATION



2



5701 SOUTH SANTA FE DRIVE
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AIROSMITH DEVELOPMENT
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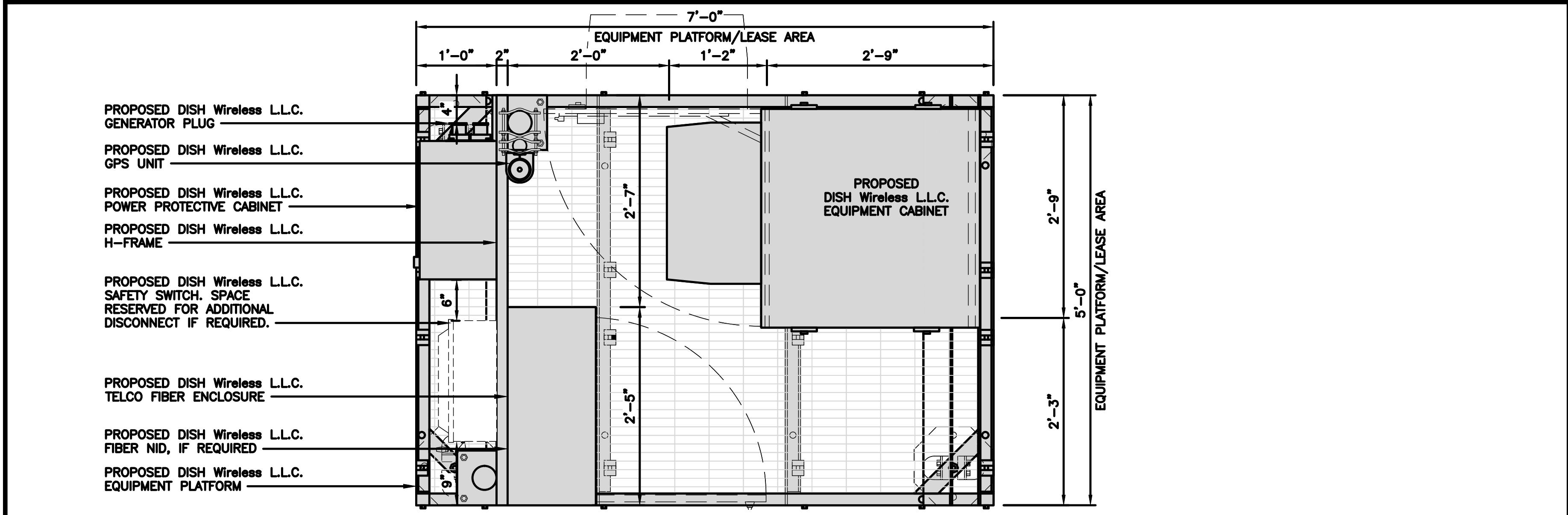
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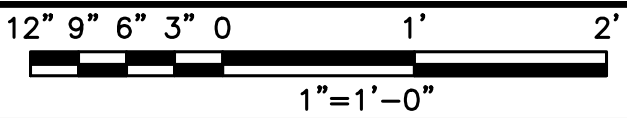
NJJER01881D
234 SUYDAM AVENUE
JERSEY CITY, NJ 07304

SHEET TITLE
NORTH AND SOUTH
ELEVATIONS

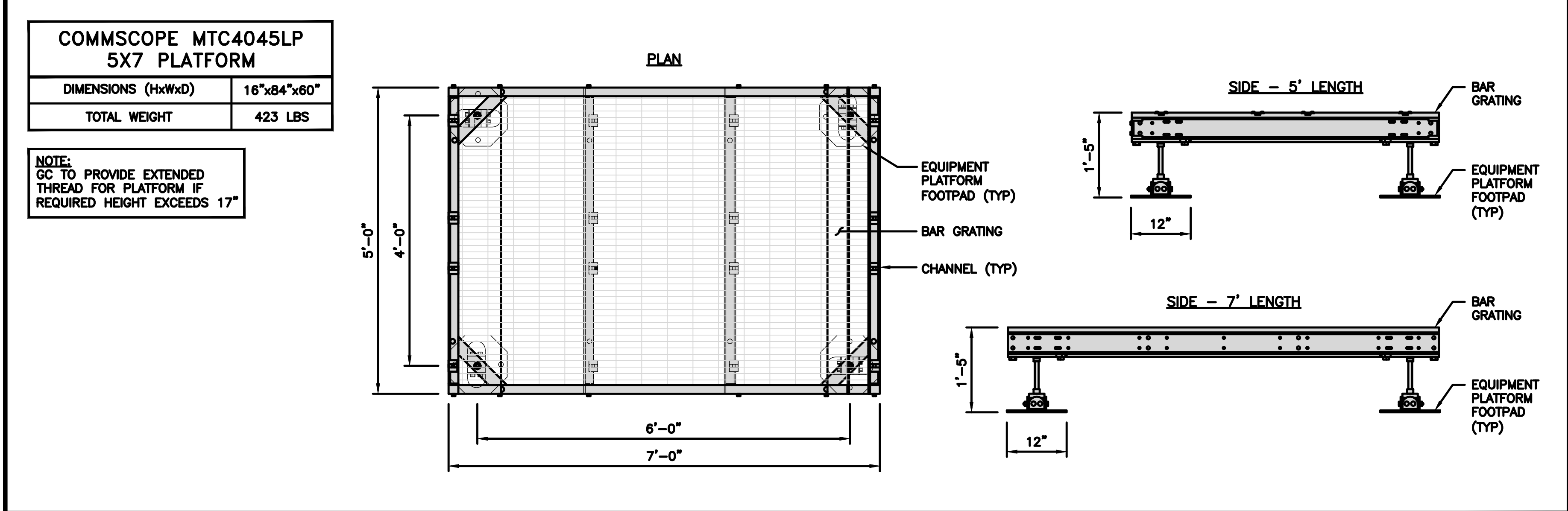
SHEET NUMBER
A-5



PLATFORM EQUIPMENT PLAN



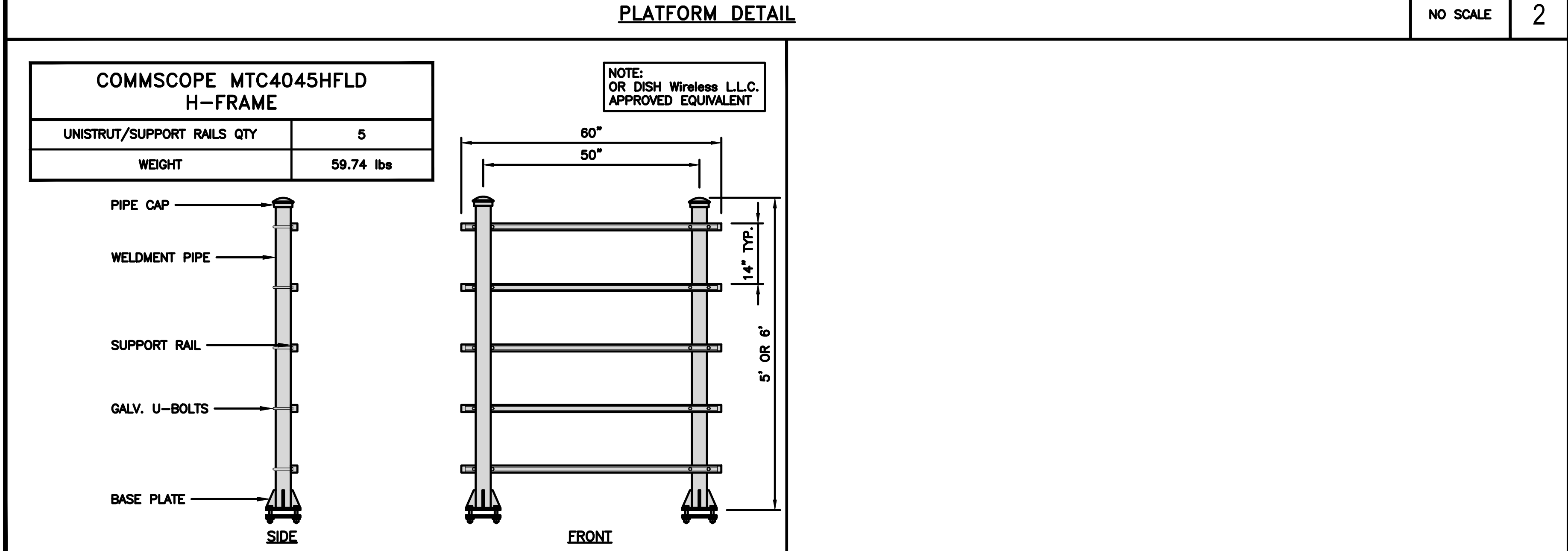
1



PLATFORM DETAIL

NO SCALE

2



H-FRAME DETAIL

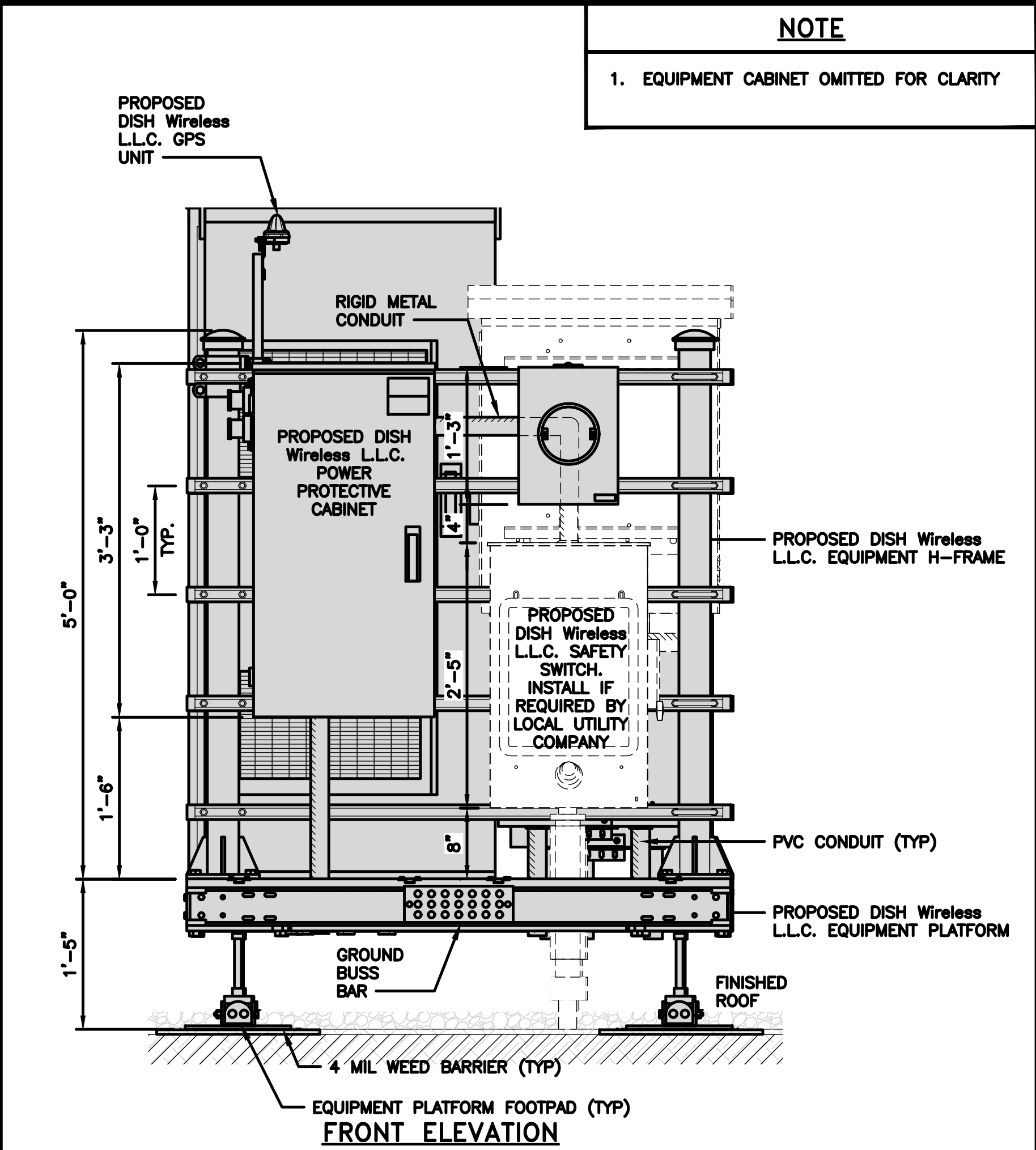
NO SCALE

3

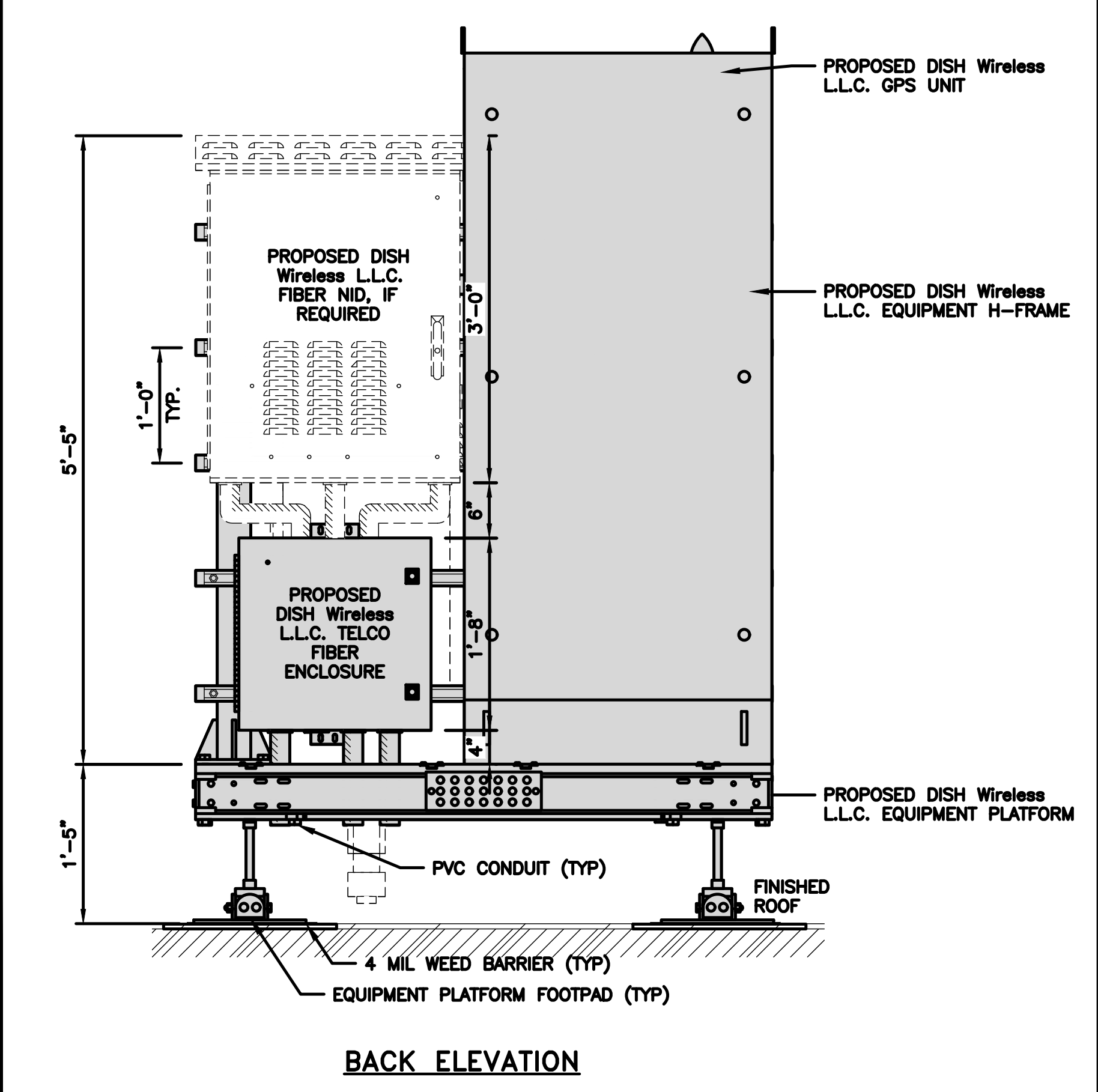
NOT USED

NO SCALE

4

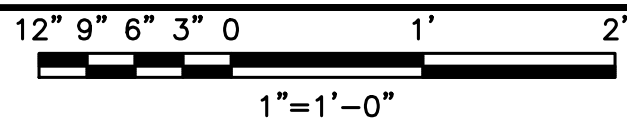


FRONT ELEVATION



BACK ELEVATION

H-FRAME EQUIPMENT ELEVATION



5

NOTE

1. EQUIPMENT CABINET OMITTED FOR CLARITY

dish
wireless.

5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120

AIROSMITH

AIROSMITH DEVELOPMENT
AIROSMITH ENGINEERING
318 WEST AVE.
SARATOGA SPRINGS, NY 12866

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JLM JLM ASW

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DISH NJ 202201

DISH Wireless L.L.C.
PROJECT INFORMATION

NJER01881D
234 SUYDAM AVENUE
JERSEY CITY, NJ 07304

SHEET TITLE
EQUIPMENT PLATFORM AND
H-FRAME DETAILS

SHEET NUMBER

A-6

DELTA ELECTRONICS, INC.
ESOA600-HCB04 (HEX)

DIMENSIONS (HxWxD)

75"x32"x32"

WEIGHT (EMPTY)

625 lbs (approx.)

LEFT SIDE

RIGHT SIDE

FRONT

BACK

PLAN

CABINET DETAIL

NO SCALE

1

GE BREAKER PANEL
TLM1220RCUP

ENCLOSURE DIM (HxWxD)

29"x13"x5"

TOTAL WEIGHT (EMPTY)

26 LBS

MAX VOLTAGE/MAX AMPS

240V/200A

ENCLOSURE RATING

OUTDOOR NEMA 3R

FRONT

BACK

SIDE

PLAN

BREAKER PANEL DETAIL

NO SCALE

2

SQUARE D SAFETY SWITCHES
D224NRB

ENCLOSURE DIM (HxWxD)

29.25"x19.00"x8.50"

ENCLOSURE TYPE

NEMA 3R RAINPROOF

UL LISTED

FILE E-2875

SIDE

FRONT

TOP

SAFETY SWITCH DETAIL

NO SCALE

3

NOT USED

NO SCALE

4

ZAYO 5RU (LEFT SWING DOOR)
FIBER NID ENCLOSURE

DIMENSIONS (HxWxD)

36.1"x29"x12.9"

WEIGHT

85 lbs

BACK

SIDE

FRONT

BOTTOM

FIBER NID ENCLOSURE DETAIL

NO SCALE

5

CHARLES CFIT-PF2020DSH1
FIBER TELCO ENCLOSURE

ENCLOSURE DIMS (HxWxD)

20"x20"x9"

ENCLOSURE WEIGHT

20 lbs

MOUNTING

WALL

COMPLIANCE

TYPE 4

SIDE

BACK

FRONT

FRONT

FIBER TELCO ENCLOSURE DETAIL

NO SCALE

6

MINIMUM OF 75% OR
270° IN ANY DIRECTION

GPS

GPS UNIT

OBSTRUCTIONS MUST
BE BELOW 10'

GPS MINIMUM SKY VIEW REQUIREMENTS

NO SCALE

7

PCTEL
GPSGL-TMG-SPI-40NCB

DIMENSIONS (DIAxH) MM/INCH

81x184mm
3.2"x7.25"

WEIGHT W/ACCESSORIES

075 lbs

CONNECTOR

N-FEMALE

FREQUENCY RANGE

1590 ± 30MHz

BACK

SIDE

TOP

GPS DETAIL

NO SCALE

8

CU12PSM6P4XXX
(4 AWG CONDUCTORS)

1.75"ø

27" MIN
BEND RADIUS

CU12PSM9P6XXX
(6 AWG CONDUCTORS)

1.60"ø

24" MIN
BEND RADIUS

CU12PSM9P8XXX
(8 AWG CONDUCTORS)

1.41"ø

22" MIN
BEND RADIUS

CABLES UNLIMITED HYBRID CABLE
MINIMUM BEND RADIUSSES

NO SCALE

9

dish
wireless.

5701 SOUTH SANTA FE DRIVE
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AIROSMITH

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CHECKED BY: JLM

APPROVED BY: ASW

RFDS REV #: N/A

PRELIMINARY
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REV

DATE

DESCRIPTION

A

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DISH NJ 202201

DISH Wireless L.L.C.
PROJECT INFORMATION

NJJer01881D
234 SUYDAM AVENUE
JERSEY CITY, NJ 07304

SHEET TITLE
EQUIPMENT DETAILS

SHEET NUMBER
A-7

DISH Wireless L.L.C. TEMPLATE VERSION 48 – 2/21/2022

FUJITSU DUAL BAND
TA08025-B604

DIMENSIONS (HxWxD)	14.9"x15.7"x7.8"
WEIGHT	63.9 lbs
CONNECTOR TYPE	4.3-10 RF CONNECTOR
POWER SUPPLY	DC -58~-36V

BACK

SIDE

FRONT

RRH DETAIL

NO SCALE

1

FUJITSU TRIPLE BAND
TA08025-B605

DIMENSIONS (HxWxD)	14.9"x15.7"x9"
WEIGHT	74.95 lbs
CONNECTOR TYPE	4.3-10 RF CONNECTOR
POWER SUPPLY	DC -58~-36V

BACK

SIDE

FRONT

RRH DETAIL

NO SCALE

2

SABRE DOUBLE Z-BRACKET
C10123155

DIMENSIONS (HxWxD) (1 BRACKET)	5"x20"x1-13/16"
WEIGHT (FULL ASSEMBLY)	35.79 lbs
PACKAGE QUANTITY	4

#	DESCRIPTION
1	PLATE, CHANNEL BRACKET
2	RRH Z BRACKET, 3/16"
3	THREADED ROD ASSEMBLY 1/2"x12"

NOTE:
OR DISH Wireless L.L.C.
APPROVED EQUIVALENT

RRH MOUNT DETAIL

NO SCALE

3

JMA
MX08FRO665-21

DIMENSIONS (HxWxD)	72"x20.0"x8.0"
RF PORTS, CONNECTOR TYPE	8 x 4.3-10 FEMALE
WEIGHT	64.5 lbs
WEIGHT WITH BRACKETS	82.5 lbs

SIDE

FRONT

ANTENNA DETAIL

NO SCALE

4

JMA ANTENNA MOUNT BRACKET
#91900318

TOTAL WEIGHT (WITH BRACKETS)	18 lbs (8.18 Kg)
POLE DIAMETER RANGE	2.5" TO 4.5"

NOTE:
KIT #91900318: TOP AND BOTTOM BRACKETS
FOR 4-, 6-, AND 8-FOOT ANTENNAS
ANTENNA BRACKET NOT PART OF KIT

NOTE:
OR DISH Wireless L.L.C.
APPROVED EQUIVALENT

ANTENNA BRACKET DETAIL

NO SCALE

5

COMMSCOPE
RF-NL10-DSH

FACE SIZE	126"
WEIGHT	681 lbs

NOTE:
OR DISH Wireless L.L.C.
APPROVED EQUIVALENT

SLED DETAIL

NO SCALE

6

SITE PRO1 WALL MOUNT
SP250-6

DIMENSIONS (HxW) (PER BRACKET)	5"x14.5"
WEIGHT (2 BRACKETS W/O PIPE)	20.11 lbs

NOTE:
OR DISH Wireless L.L.C.
APPROVED EQUIVALENT

ANTENNA MOUNT DETAIL

NO SCALE

7

UTILITY RUBBER MAT, BLACK

DIMENSIONS	4'x 3'x 1/2"
WEIGHT/ VOLUME	36.5 LB AVERAGE
MATERIAL	100% RECYCLE RUBBER

UTILITY RUBBER MAT DETAIL

NO SCALE

8

RAYCAP RDIDC-3045-PF-48
SURGE PROTECTION DEVICE (OVP)

DIMENSIONS (HxWxD)	19"x16.21"x9.64"
WEIGHT	21 lbs

BACK

SIDE

FRONT

SURGE PROTECTION DEVICE (OVP) DETAIL

NO SCALE

9

DISH Wireless L.L.C. TEMPLATE VERSION 48 - 2/21/2022

5701 SOUTH SANTA FE DRIVE
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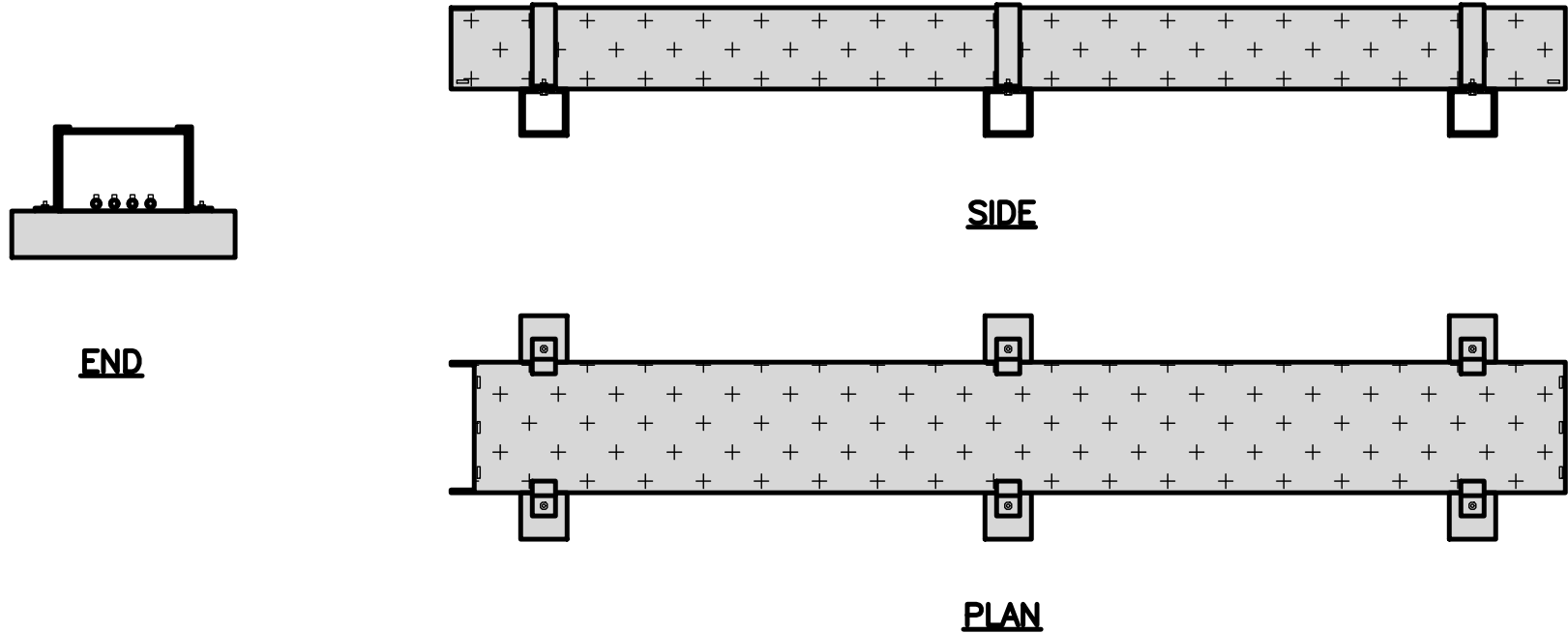
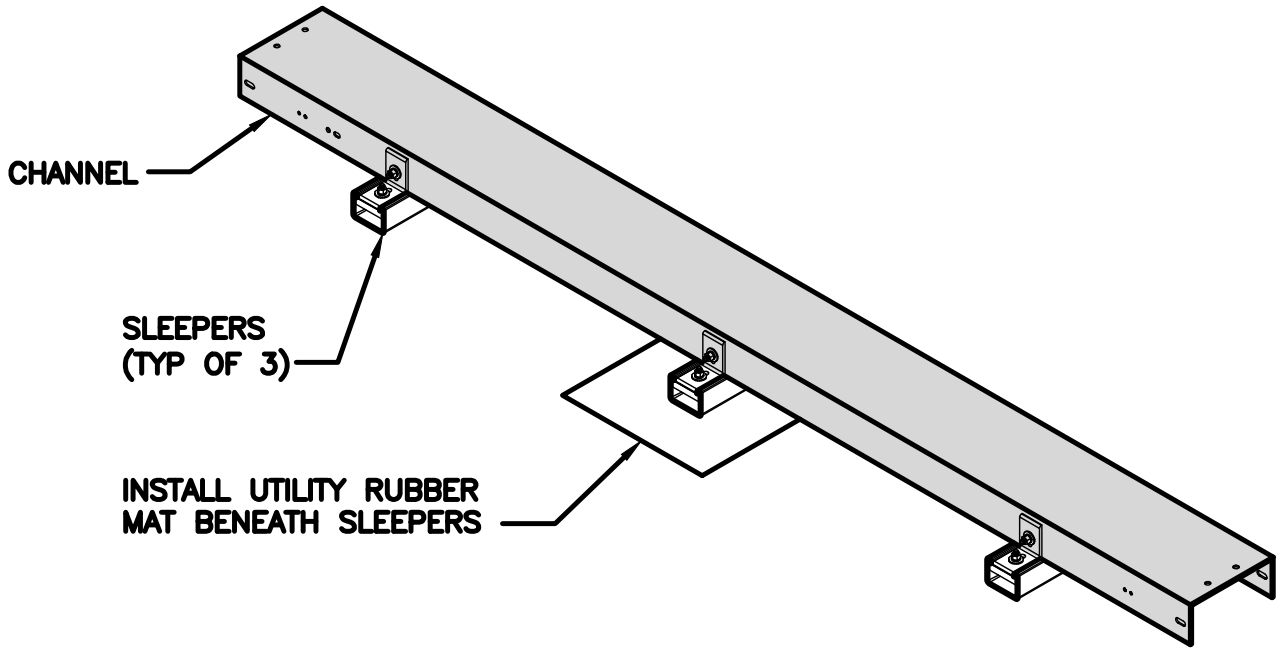
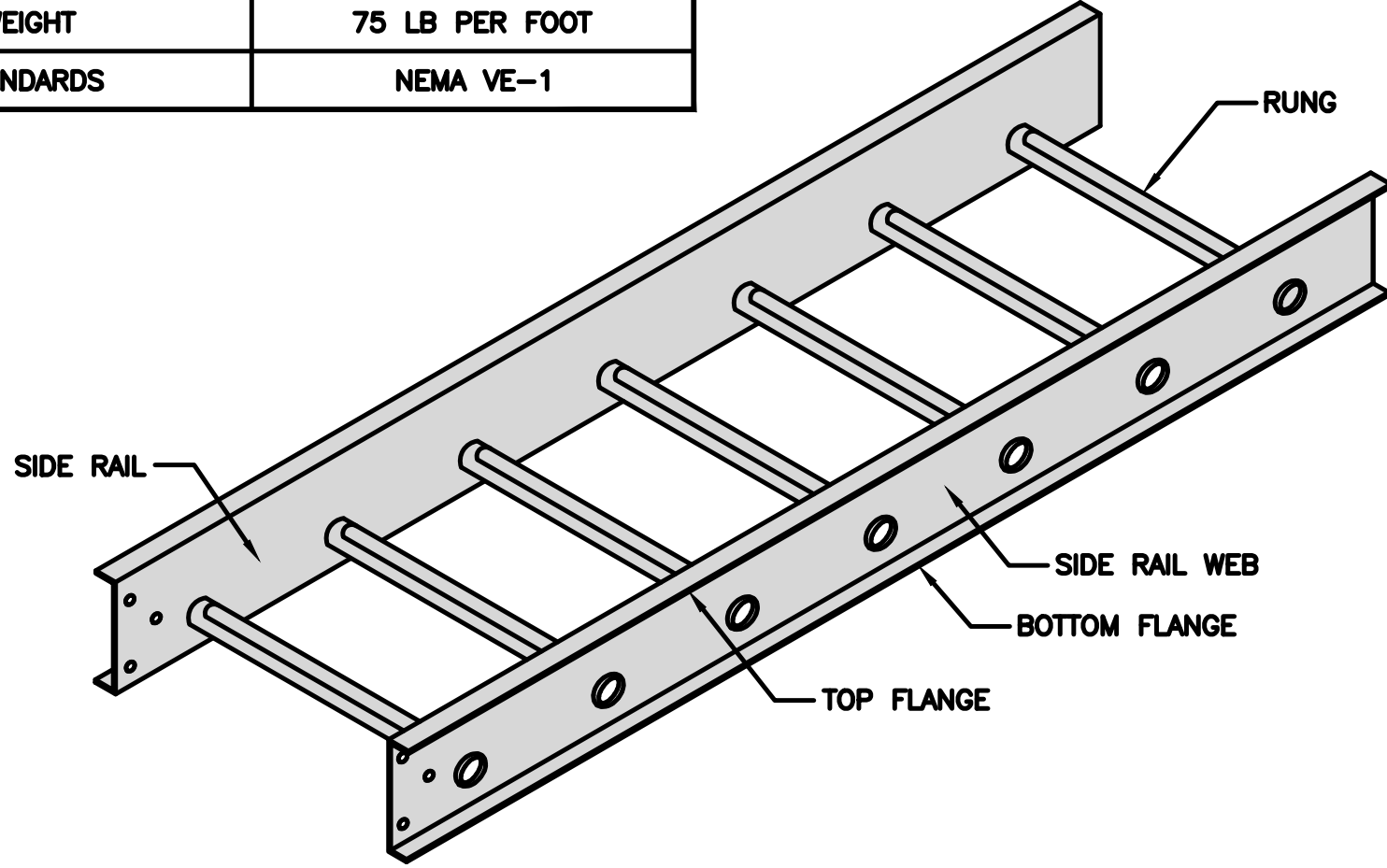
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PROJECT INFORMATION

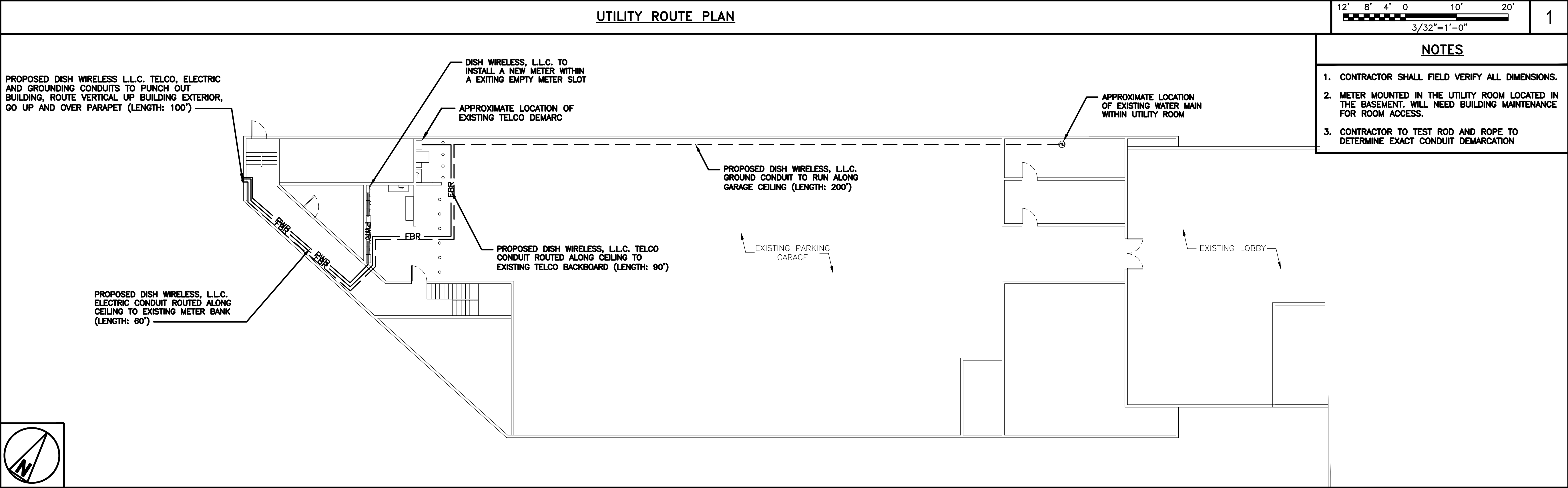
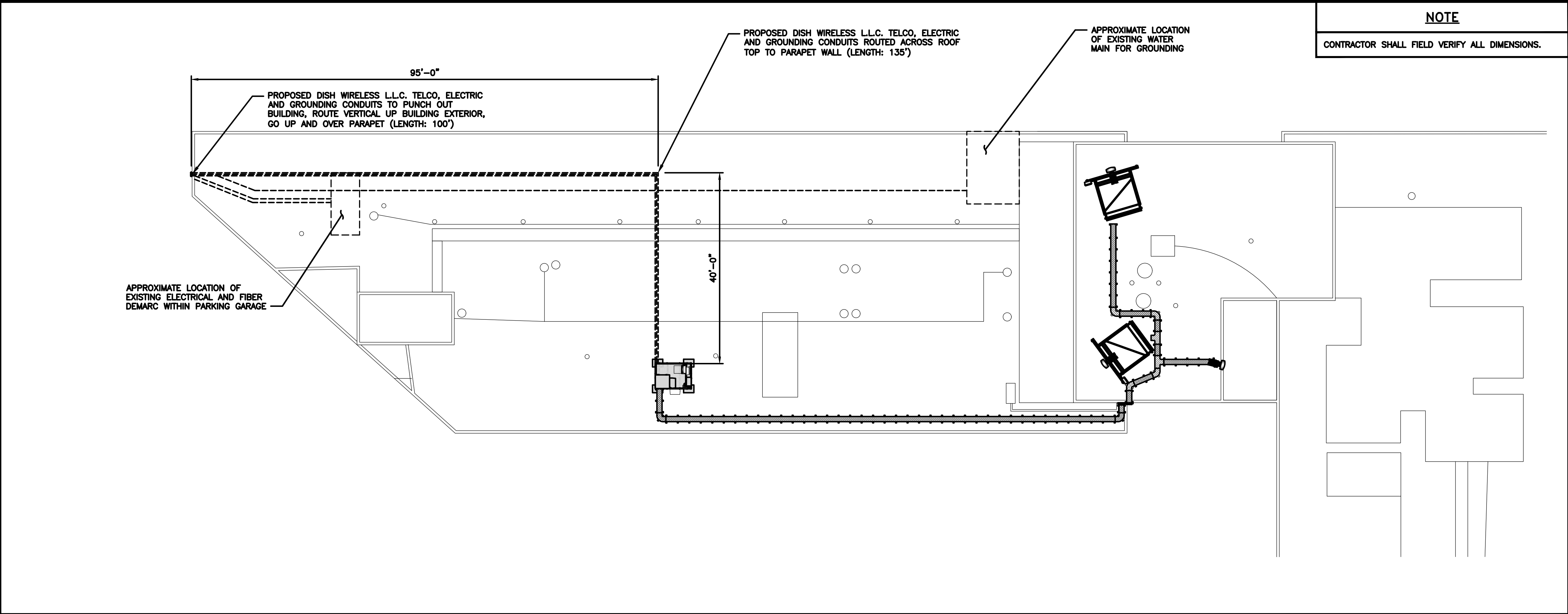
NJJER01881D
234 SUYDAM AVENUE
JERSEY CITY, NJ 07304

SHEET TITLE
EQUIPMENT DETAILS

SHEET NUMBER

A-8

<table><tr><td colspan="2">COMMSCOPE RT-CB4D ROOFTOP COVER KIT</td><td>MOUNTING</td><td colspan="2">NON-PENETRATING</td></tr><tr><td>DIMENSIONS (HxWxL)</td><td>7"x 11.25"x 96"</td><td rowspan="3">INCLUDED PRODUCTS:</td><td colspan="2">RTCB4D.01 CHANNEL (1)</td></tr><tr><td>WEIGHT/ VOLUME</td><td>85.98 LBS</td><td colspan="2">MT-F1598 SLEEPERS (3)</td></tr><tr><td>CABLE RUN (QTY)</td><td>4</td><td colspan="2">RTCUH HARDWARE</td></tr><tr><td colspan="2"></td><td></td><td colspan="2">RTHC.01 HOLD-DOWN CLAMPS (6)</td></tr></table> <div><p>Diagram showing the side and plan views of the rooftop cover kit. The side view shows a rectangular cover with four hold-down clamps. The plan view shows the cover with six hold-down clamps. The end view shows the cover with four hold-down clamps.</p></div>			COMMSCOPE RT-CB4D ROOFTOP COVER KIT		MOUNTING	NON-PENETRATING		DIMENSIONS (HxWxL)	7"x 11.25"x 96"	INCLUDED PRODUCTS:	RTCB4D.01 CHANNEL (1)		WEIGHT/ VOLUME	85.98 LBS	MT-F1598 SLEEPERS (3)		CABLE RUN (QTY)	4	RTCUH HARDWARE					RTHC.01 HOLD-DOWN CLAMPS (6)		<table><tr><td colspan="2">COMMSCOPE MT-F1543 ROOFTOP CABLE BRIDGE KIT</td></tr><tr><td>DIMENSIONS (HxWxL)</td><td>7"x30"x96"</td></tr><tr><td>WEIGHT</td><td>112.3 lbs</td></tr><tr><td>CABLE RUN, QUANTITY</td><td>8</td></tr><tr><td colspan="2">NOTE: NON-PENETRATING, 12-GAUGE COVER, OR APPROVED EQUAL. INCLUDES: CHANNEL, HARDWARE AND (3) SLEEPERS</td></tr></table> <div><p>Diagram showing the wall mounted cable bridge kit. The channel is shown with three sleepers (typ of 3) and a utility rubber mat installed beneath the sleepers.</p></div>			COMMSCOPE MT-F1543 ROOFTOP CABLE BRIDGE KIT		DIMENSIONS (HxWxL)	7"x30"x96"	WEIGHT	112.3 lbs	CABLE RUN, QUANTITY	8	NOTE: NON-PENETRATING, 12-GAUGE COVER, OR APPROVED EQUAL. INCLUDES: CHANNEL, HARDWARE AND (3) SLEEPERS		<table><tr><td colspan="2">COPE 1B48-12SL-12-09 ROOFTOP LADDER TRAY</td></tr><tr><td>DIMENSIONS (HxWxL)</td><td>5.25"x12"x12'</td></tr><tr><td>WEIGHT</td><td>75 LB PER FOOT</td></tr><tr><td>STANDARDS</td><td>NEMA VE-1</td></tr></table> <div><p>Diagram showing the rooftop ladder tray. The side rail is shown with rungs and flanges. The side rail web and bottom flange are also labeled.</p></div>			COPE 1B48-12SL-12-09 ROOFTOP LADDER TRAY		DIMENSIONS (HxWxL)	5.25"x12"x12'	WEIGHT	75 LB PER FOOT	STANDARDS	NEMA VE-1
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ROOFTOP CABLE TRAY DETAIL			NO SCALE	1	WALL MOUNTED CABLE TRAY DETAIL			NO SCALE	2	ROOFTOP LADDER TRAY DETAIL			NO SCALE	3																																			
NOT USED			NO SCALE	4	NOT USED			NO SCALE	5	NOT USED			NO SCALE	6																																			
NOT USED			NO SCALE	7	NOT USED			NO SCALE	8	NOT USED			NO SCALE	9																																			



UTILITY ROUTE (GROUND FLOOR)



5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120



AIROSMITH DEVELOPMENT
AIROSMITH ENGINEERING
318 WEST AVE.
SARATOGA SPRINGS, NY 12866

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DRAWN BY: JLM
CHECKED BY: JLM
APPROVED BY: ASW

RFDS REV #: N/A

PRELIMINARY DOCUMENTS

SUBMITTALS		
REV	DATE	DESCRIPTION
A	12/14/2022	ISSUED FOR REVIEW

A&E PROJECT NUMBER
DISH NJ 202201

DISH Wireless L.L.C.
PROJECT INFORMATION
NJJER01881D
234 SUYDAM AVENUE
JERSEY CITY, NJ 07304

SHEET TITLE
ELECTRICAL/FIBER ROUTE
PLAN AND NOTES

SHEET NUMBER
E-1

DC POWER WIRING SHALL BE COLOR CODED AT EACH END FOR IDENTIFYING +24V AND -48V CONDUCTORS. RED MARKINGS SHALL IDENTIFY +24V AND BLUE MARKINGS SHALL IDENTIFY -48V.

1. CONTRACTOR SHALL INSPECT THE EXISTING CONDITIONS PRIOR TO SUBMITTING A BID. ANY QUESTIONS ARISING DURING THE BID PERIOD IN REGARDS TO THE CONTRACTOR'S FUNCTIONS, THE SCOPE OF WORK, OR ANY OTHER ISSUE RELATED TO THIS PROJECT SHALL BE BROUGHT UP DURING THE BID PERIOD WITH THE PROJECT MANAGER FOR CLARIFICATION, NOT AFTER THE CONTRACT HAS BEEN AWARDED.

2. ALL ELECTRICAL WORK SHALL BE DONE IN ACCORDANCE WITH CURRENT NATIONAL ELECTRICAL CODES AND ALL STATE AND LOCAL CODES, LAWS, AND ORDINANCES. PROVIDE ALL COMPONENTS AND WIRING SIZES AS REQUIRED TO MEET NEC STANDARDS.

3. LOCATION OF EQUIPMENT, CONDUIT AND DEVICES SHOWN ON THE DRAWINGS ARE APPROXIMATE AND SHALL BE COORDINATED WITH FIELD CONDITIONS PRIOR TO CONSTRUCTION.

4. CONDUIT ROUGH-IN SHALL BE COORDINATED WITH THE MECHANICAL EQUIPMENT TO AVOID LOCATION CONFLICTS. VERIFY WITH THE MECHANICAL EQUIPMENT CONTRACTOR AND COMPLY AS REQUIRED.

5. CONTRACTOR SHALL PROVIDE ALL BREAKERS, CONDUITS AND CIRCUITS AS REQUIRED FOR A COMPLETE SYSTEM.

6. CONTRACTOR SHALL PROVIDE PULL BOXES AND JUNCTION BOXES AS REQUIRED BY THE NEC ARTICLE 314.

7. CONTRACTOR SHALL PROVIDE ALL STRAIN RELIEF AND CABLE SUPPORTS FOR ALL CABLE ASSEMBLIES. INSTALLATION SHALL BE IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS AND RECOMMENDATIONS.

8. ALL DISCONNECTS AND CONTROLLING DEVICES SHALL BE PROVIDED WITH ENGRAVED PHENOLIC NAMEPLATES INDICATING EQUIPMENT CONTROLLED, BRANCH CIRCUITS INSTALLED ON, AND PANEL FIELD LOCATIONS FED FROM.

9. INSTALL AN EQUIPMENT GROUNDING CONDUCTOR IN ALL CONDUITS PER THE SPECIFICATIONS AND NEC 250. THE EQUIPMENT GROUNDING CONDUCTORS SHALL BE BONDED AT ALL JUNCTION BOXES, PULL BOXES, AND ALL DISCONNECT SWITCHES, AND EQUIPMENT CABINETS.

10. ALL NEW MATERIAL SHALL HAVE A U.L. LABEL.

11. PANEL SCHEDULE LOADING AND CIRCUIT ARRANGEMENTS REFLECT POST-CONSTRUCTION EQUIPMENT.

12. CONTRACTOR SHALL BE RESPONSIBLE FOR AS-BUILT PANEL SCHEDULE AND SITE DRAWINGS.

DARK TELCO BOX – INTERIOR WIRING LAYOUT

NO SCALE

2

LIT TELCO BOX – INTERIOR WIRING LAYOUT (OPTIONAL)

NO SCALE

3

ELECTRICAL NOTES

NO SCALE

1

V.I.F.

CORE DRILL OPENINGS. DIAMETER TO BE VERIFIED IN FIELD

3M FIRESTOP SEALANT CP25WB+ CAULK OR EQUAL 1" THICK MINIMUM, APPLY FLUSH WITH WALL. UL SYSTEM C-AJ-8016: F-RATING: 3 HRS, T RATING: 0 HRS.

NEW RGS CONDUIT (TYP FOR ELECTRIC AND TELCO.)

STEEL SLEEVE GROUTED SOLID IN CORE, FLUSH WITH FLOOR & CEILING (1" OR GREATER DIAMETER THAN CONDUIT)

APPROVED FIRE SAFE INSULATION, TIGHTLY PACKED (PRE-MOLDED CALCIUM SILICATE OR ROCK WOOL)

EXISTING MASONRY WALL

MASONRY WALL PENETRATION DETAIL

NO SCALE

6

DISH Wireless L.L.C. PROVIDES 12AWG WIRE (6' TAIL)

PROPOSED DISH Wireless L.L.C. UNISTRUT

PROPOSED DISH Wireless L.L.C. 10 AMP DISTRIBUTION BREAKER

PROPOSED DISH Wireless L.L.C. 12 AWG WIRE

PROPOSED DISH Wireless L.L.C. 1-1/2" POWER FROM CABINET

DISH Wireless L.L.C. INSTALLS 1-1/2" CONDUITS FOR POWER AND FIBER TO CABINET

DISH Wireless L.L.C. FIBER DISTRIBUTION PANEL

PROPOSED DISH Wireless L.L.C. TELCO FIBER ENCLOSURE

DISH Wireless L.L.C. FIBER JUMPER TO CABINET WILL NEED TO BE TERMINATED BY FIBER PROVIDER ON OTHER SIDE OF BULKHEAD/LC TO LC CONNECTOR WHERE CIRCUIT IS TERMINATED.

PROPOSED FIBER PROVIDER FIBER LATERAL FROM RIGHT OF WAY TO STREET, TERMINATED TO FDP

PROPOSED DISH Wireless L.L.C. 1-1/2" FIBER TO CABINET

PROPOSED DISH Wireless L.L.C. 2" CONDUIT FROM COMMERCIAL FIBER VAULT

PROPOSED HILTI SLEEVE ANCHOR HLC-HX 3/8"x1 7/8" PN. 00336246

EXISTING CONCRETE SLAB

3/8" A325 THREADED ROD

PROPOSED UNISTRUT (INSTALL AS HIGH AS POSSIBLE)

UNISTRUT SQUARE WASHER (TYP.)

3/8" HARDWARE

PROPOSED 1" RGS GROUND CONDUIT

PROVIDE FIRESTOPPING MATERIALS TO SEAL PENETRATION (TYP.)

PROPOSED 2" CONDUIT (TYP.)

PROPOSED UNISTRUT CLAMP (TYP.)

NOTE: PROVIDE TRAPEZE HANGER EVERY 4' ON CENTER

UTILITY CONDUIT HANGER DETAIL

NO SCALE

4

EXISTING WALL/PARAPET

PROPOSED UNISTRUT

3/8" HARDWARE

PROPOSED 1" RGS FOR GROUND

PROPOSED CLAMP AS REQUIRED (TYP.)

PROPOSED 2" RGS FOR ELECTRIC

PROPOSED 2" RGS FOR TELCO

UNISTRUT SQUARE WASHER (TYP.)

FASTEN WITH HILTI AS REQUIRED

UNISTRUT CONDUIT CLAMP SIZE AS REQUIRED (TYP.)

PROPOSED 2" CONDUIT (TYP.)

PROPOSED 1" RGS GROUND CONDUIT

PROPOSED 4"x4" PVC SLEEPER 5' O.C.

1/2" THICK RUBBER PAD BY GOODYEAR OR APPROVED EQUIVALENT 6" X 24"

WALL

ROOFTOP

CONDUIT ROUTING DETAIL

NO SCALE

5

NOTE: FIBER PROVIDER WILL NEED TO PROVIDE AN ADDITIONAL 5FT UNISTRUT, 2 U-BOLTS WITH 4 NUTS, IN THE EVENT THE BRACKET SPACING DOESN'T LINE UP WITH CURRENT SPACING BELOW

PROPOSED DISH Wireless L.L.C. UNISTRUT

PROPOSED FIBER PROVIDER 1-1/4" FLEX CONDUITS

FIBER PROVIDER TO TERMINATE POWER TO FIBER PROVIDER NID

PROPOSED DISH Wireless L.L.C. 12 AWG WIRE (6' TAIL)

PROPOSED DISH Wireless L.L.C. 10 AMP DISTRIBUTION BREAKER

PROPOSED DISH Wireless L.L.C. 12 AWG WIRE

PROPOSED DISH Wireless L.L.C. 1-1/2" POWER FROM CABINET

PROPOSED FIBER NID, IF REQUIRED

FIBER PROVIDER TO PUNCH TOP OF TELCO BOX OF NID ENCLOSURE AND INSTALL 1-1/4" LIQUID TIGHT CONNECTORS, UL LISTED, NYLON MATERIAL, WITH O-RING GASKET

FIBER PROVIDER TO INSTALL 1-1/4" FLEX CONDUITS BETWEEN FDP TELCO BOX & NID

PROPOSED DISH Wireless L.L.C. TELCO FIBER ENCLOSURE

PROPOSED DISH Wireless L.L.C. 1-1/2" FIBER TO CABINET

PROPOSED DISH Wireless L.L.C. 2" CONDUIT FROM COMMERCIAL FIBER VAULT

MASONRY WALL PENETRATION DETAIL

NO SCALE

7

NOT USED

NO SCALE

8



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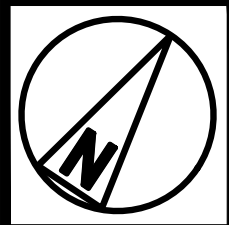
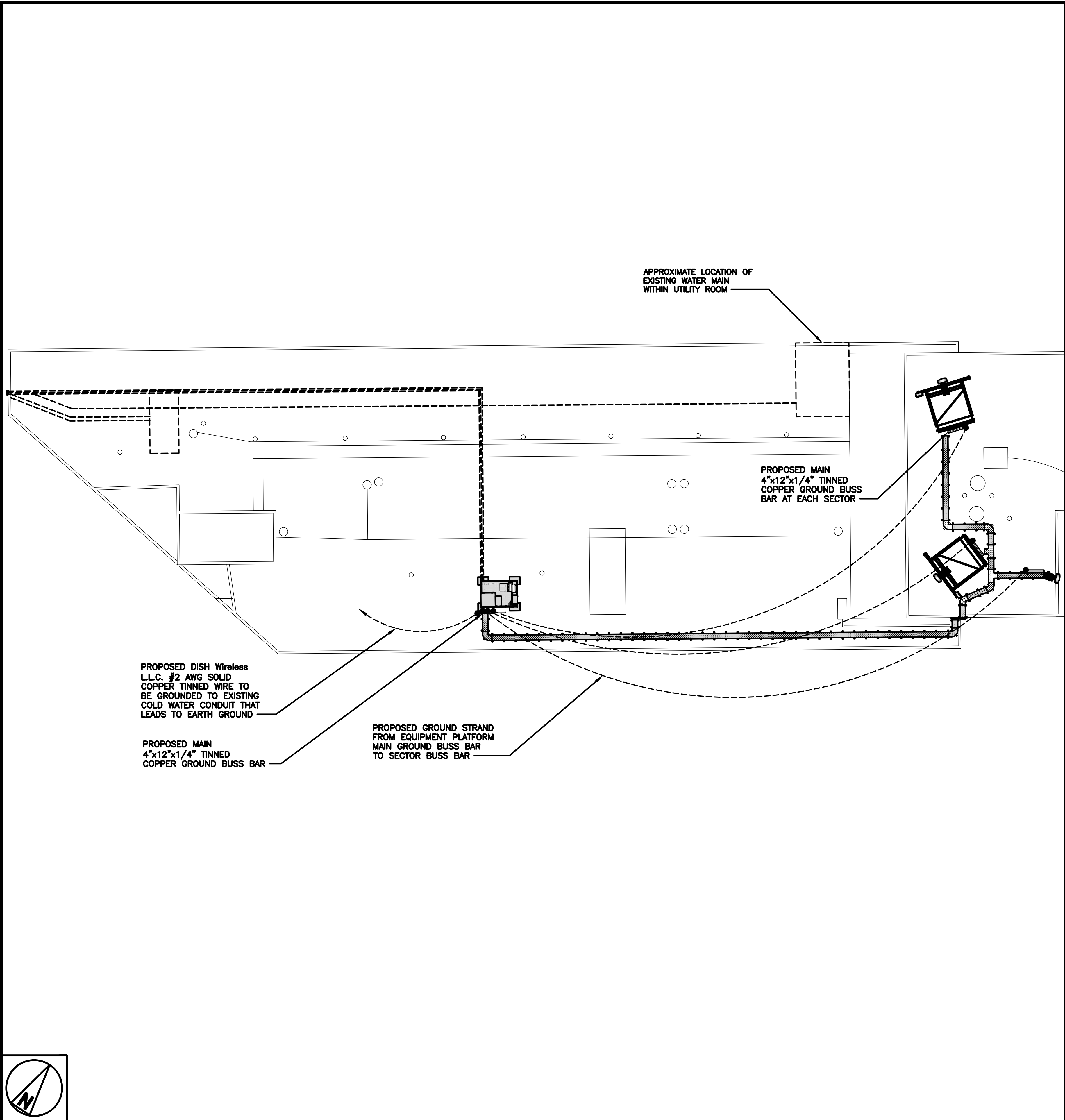
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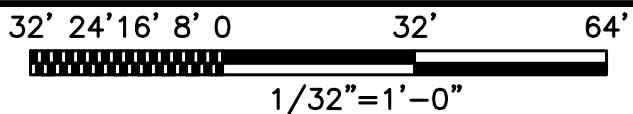
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PROJECT INFORMATION
NJJER01881D
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JERSEY CITY, NJ 07304

SHEET TITLE
ELECTRICAL
DETAILS

SHEET NUMBER
E-2



GROUNDING PLAN



- EXOTHERMIC CONNECTION

■

MECHANICAL CONNECTION

GROUND BUS BAR

GROUND ROD
- TEST GROUND ROD WITH INSPECTION SLEEVE

#6 AWG STRANDED & INSULATED

-.-.-.-

#2 AWG SOLID COPPER TINNED

▲

BUSS BAR INSULATOR

GROUNDING LEGEND

1. GROUNDING IS SHOWN DIAGRAMMATICALLY ONLY.
2. CONTRACTOR SHALL GROUND ALL EQUIPMENT AS A COMPLETE SYSTEM. GROUNDING SHALL BE IN COMPLIANCE WITH NEC SECTION 250 AND DISH Wireless L.L.C. GROUNDING AND BONDING REQUIREMENTS AND MANUFACTURER’S SPECIFICATIONS.
3. ALL GROUND CONDUCTORS SHALL BE COPPER; NO ALUMINUM CONDUCTORS SHALL BE USED.
4. NO EXOTHERMIC WELDING ON ROOFTOP

GROUNDING ROOFTOP KEY NOTES

- A

EXTERIOR GROUND RING: #2 AWG SOLID COPPER, BURIED AT A DEPTH OF AT LEAST 30 INCHES BELOW GRADE, OR 6 INCHES BELOW THE FROST LINE AND APPROXIMATELY 24 INCHES FROM THE EXTERIOR WALL OR FOOTING.
- B

ROOFTOP GROUND SYSTEM: THE GROUND SYSTEM USING MINIMUM #2 AWG SOLID COPPER CONDUCTORS.
- C

INTERIOR GROUND RING: #2 AWG STRANDED GREEN INSULATED COPPER CONDUCTOR EXTENDED AROUND THE PERIMETER OF THE EQUIPMENT AREA. ALL NON–TELECOMMUNICATIONS RELATED METALLIC OBJECTS FOUND WITHIN A SITE SHALL BE GROUNDED TO THE INTERIOR GROUND RING WITH #6 AWG STRANDED GREEN INSULATED CONDUCTOR.
- D

BOND TO INTERIOR GROUND RING: #2 AWG SOLID TINNED COPPER WIRE PRIMARY BONDS SHALL BE PROVIDED AT LEAST AT FOUR POINTS ON THE INTERIOR GROUND RING, LOCATED AT THE CORNERS OF THE BUILDING OR ROOM.
- E

GROUND ROD: UL LISTED COPPER CLAD STEEL. MINIMUM 1/2" DIAMETER BY EIGHT FEET LONG. GROUND RODS SHALL BE INSTALLED WITH INSPECTION SLEEVES. GROUND RODS SHALL BE DRIVEN TO THE DEPTH OF GROUND RING CONDUCTOR.
- F

CELL REFERENCE GROUND BAR (CRGB): POINT OF GROUND REFERENCE FOR ALL COMMUNICATIONS EQUIPMENT FRAMES. ALL BONDS ARE MADE WITH #2 AWG UNLESS NOTED OTHERWISE STRANDED GREEN INSULATED COPPER CONDUCTORS. BOND TO COMMON BUILDING GROUND SYSTEM WITH (2) #2 SOLID TINNED COPPER CONDUCTORS.
- G

HATCH PLATE GROUND BAR: BOND TO THE COMMON BUILDING GROUND SYSTEM WITH TWO #2 AWG STRANDED GREEN INSULATED COPPER CONDUCTORS. WHEN A HATCH–PLATE AND A CELL REFERENCE GROUND BAR ARE BOTH PRESENT, THE CRGB MUST BE CONNECTED TO THE HATCH–PLATE AND TO THE INTERIOR GROUND RING USING (2) TWO #2 AWG STRANDED GREEN INSULATED COPPER CONDUCTORS EACH.
- H

EXTERIOR CABLE ENTRY PORT GROUND BARS: LOCATED AT THE ENTRANCE TO THE CELL SITE ROOM. BOND TO GROUND RING WITH A #2 AWG SOLID TINNED COPPER CONDUCTORS WITH MECHANICAL CONNECTIONS.
- I

TELCO GROUND BAR: BOND TO BOTH CELL REFERENCE GROUND BAR OR EXTERIOR GROUND RING.
- J

FRAME BONDING: THE BONDING POINT FOR TELECOM EQUIPMENT FRAMES SHALL BE THE GROUND BUS THAT IS NOT ISOLATED FROM THE EQUIPMENTS METAL FRAMEWORK.
- K

INTERIOR UNIT BONDS: METAL FRAMES, CABINETS AND INDIVIDUAL METALLIC UNITS LOCATED WITH THE AREA OF THE INTERIOR GROUND RING REQUIRE A #6 AWG STRANDED GREEN INSULATED COPPER BOND TO THE INTERIOR GROUND RING.
- L

FENCE AND GATE GROUNDING: METAL FENCES SHALL BE BONDED TO THE COMMON BUILDING GROUND SYSTEM WITH A #2 AWG SOLID TINNED COPPER CONDUCTOR AT AN INTERVAL NOT EXCEEDING 25 FEET. BONDS SHALL BE MADE AT EACH GATE POST AND ACROSS GATE OPENINGS.
- M

EXTERIOR UNIT BONDS: METALLIC OBJECTS, EXTERNAL TO OR MOUNTED TO THE BUILDING, SHALL BE BONDED TO THE COMMON BUILDING GROUND SYSTEM. USING #2 TINNED SOLID COPPER WIRE
- N

ICE BRIDGE SUPPORTS: EACH ICE BRIDGE LEG SHALL BE BONDED TO THE GROUND RING WITH #2 AWG BARE TINNED COPPER CONDUCTOR. PROVIDE EXOTHERMIC WELDS AT BOTH THE ICE BRIDGE LEG AND BURIED GROUND RING.
- O

DURING ALL DC POWER SYSTEM CHANGES INCLUDING DC SYSTEM CHANGE OUTS, RECTIFIER REPLACEMENTS OR ADDITIONS, BREAKER DISTRIBUTION CHANGES, BATTERY ADDITIONS, BATTERY REPLACEMENTS AND INSTALLATIONS OR CHANGES TO DC CONVERTER SYSTEMS IT SHALL BE REQUIRED THAT SERVICE CONTRACTORS VERIFY ALL DC POWER SYSTEMS ARE EQUIPPED WITH A MASTER DC SYSTEM RETURN GROUND CONDUCTOR FROM THE DC POWER SYSTEM COMMON RETURN BUS DIRECTLY CONNECTED TO THE CELL SITE REFERENCE GROUND BAR
- P

ROOFTOP COLLECTOR BUSS BAR IS TO BE MECHANICALLY BONDED TO COMMON BUILDING GROUND SYSTEM.

REFER TO DISH Wireless L.L.C. GROUNDING NOTES.

GROUNDING KEY NOTES

NO SCALE



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JLM	JLM	ASW

RFDS REV #: N/A

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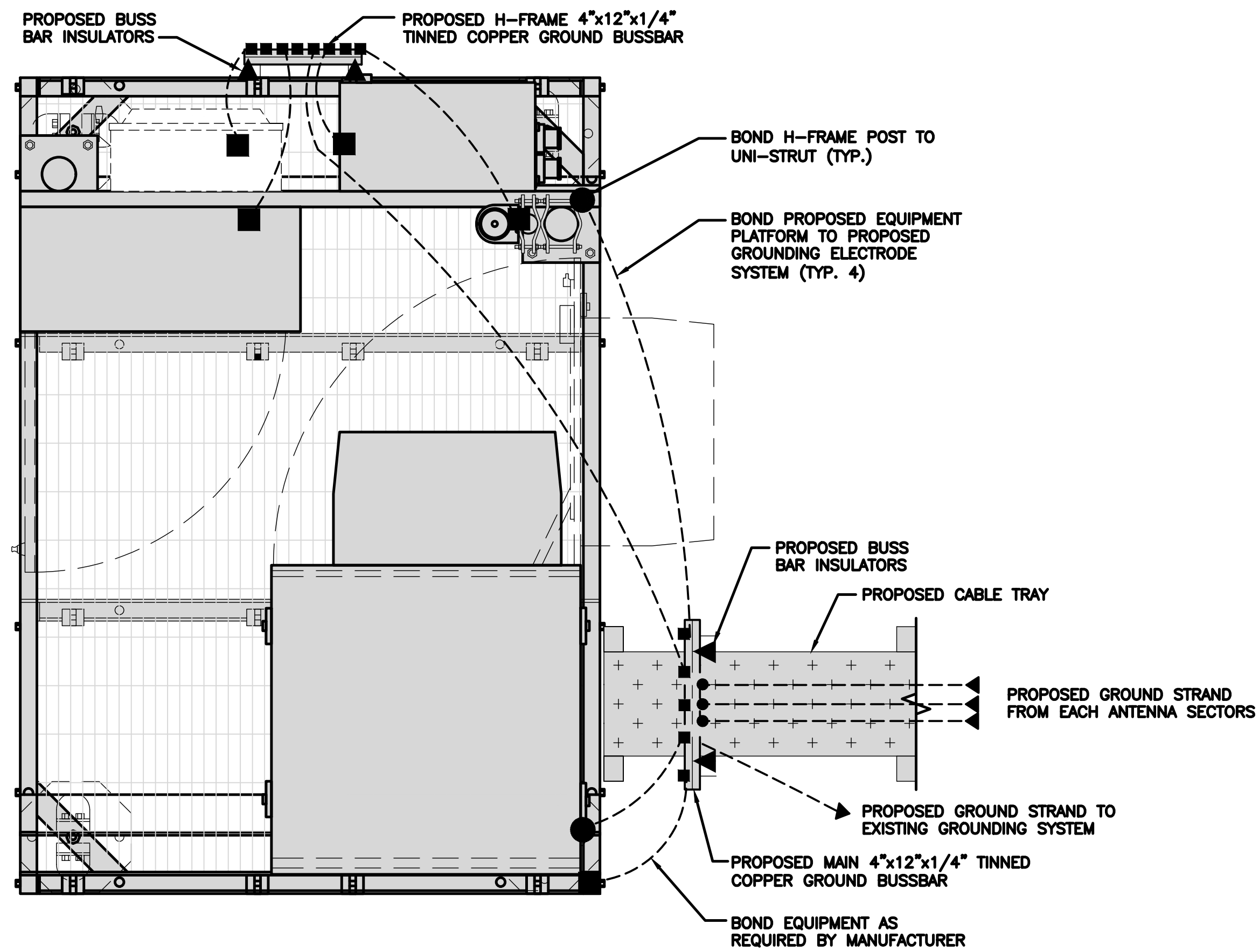
DISH Wireless L.L.C.
PROJECT INFORMATION

NJJER01881D
234 SUYDAM AVENUE
JERSEY CITY, NJ 07304

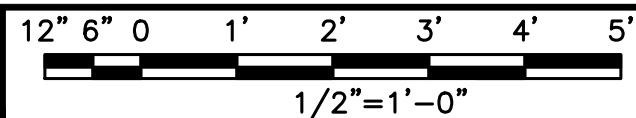
SHEET TITLE
GROUNDING PLANS
AND NOTES

SHEET NUMBER

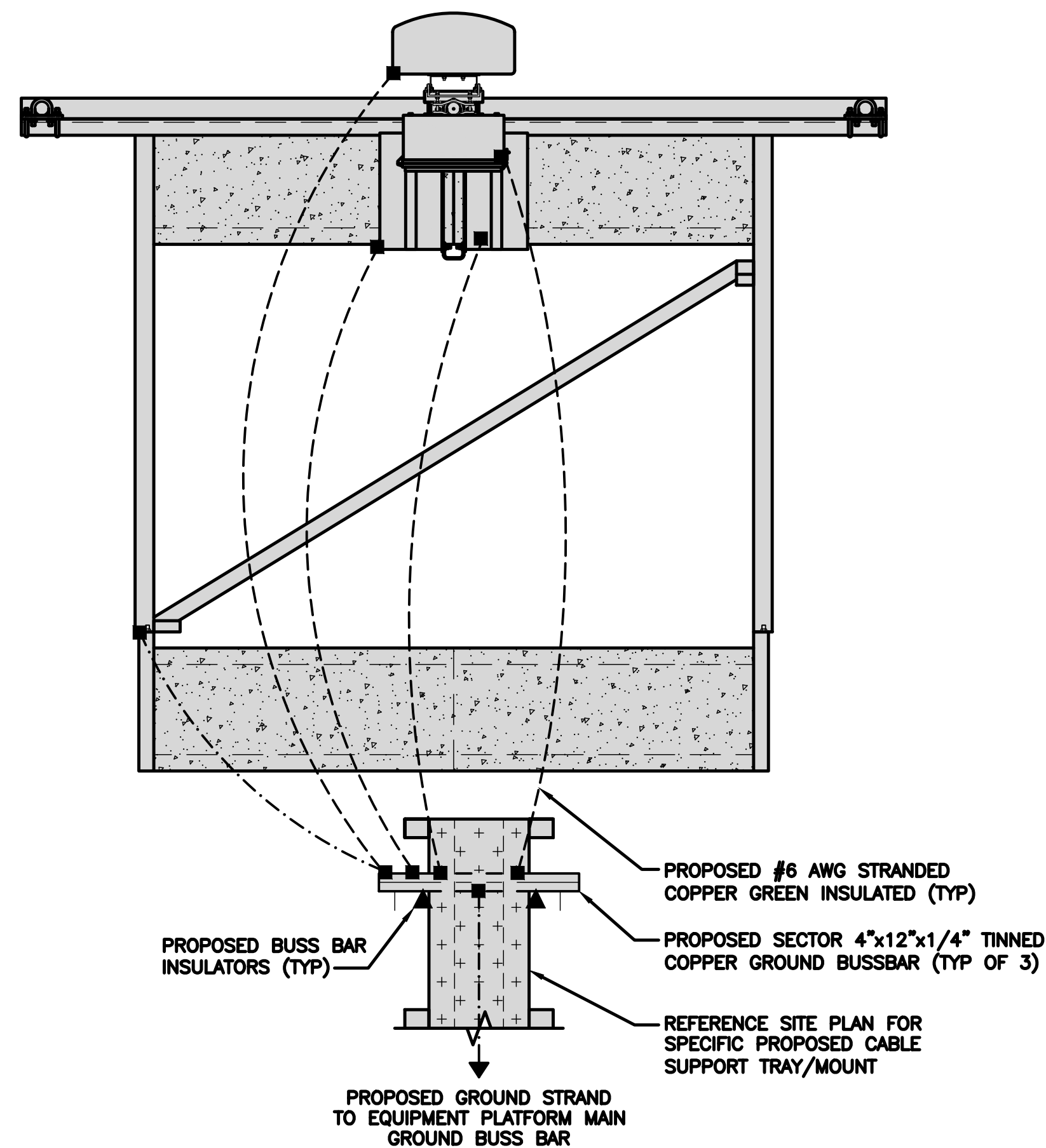
G-1



TYPICAL ROOFTOP EQUIPMENT GROUNDING PLAN



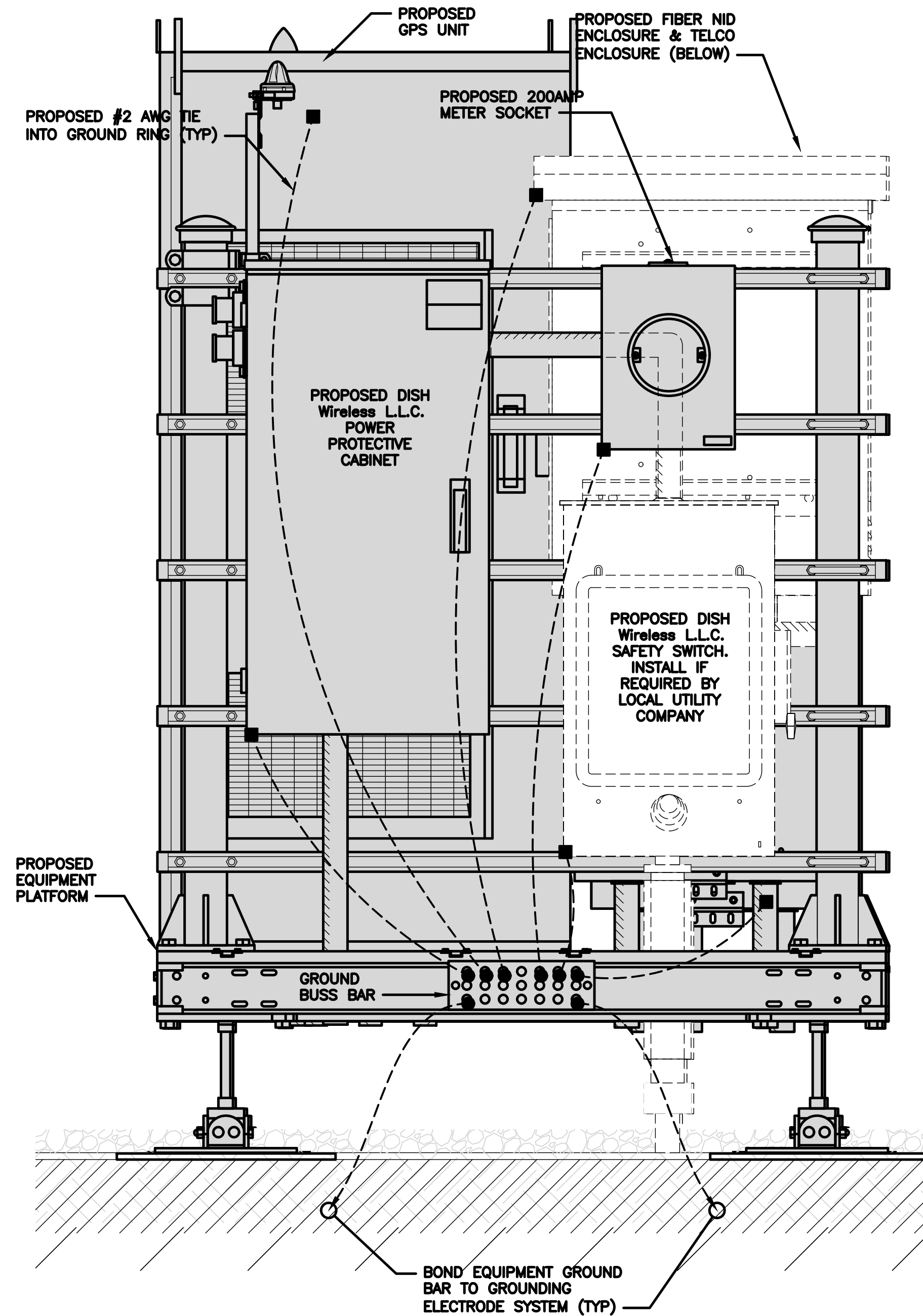
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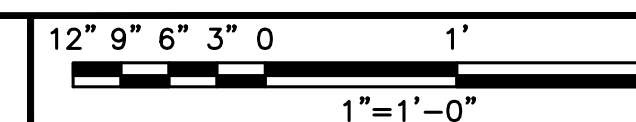
TYPICAL ROOF ANTENNA GROUNDING PLAN

NO SCALE

2



H-FRAME GROUNDING DETAIL



3

NOTE

EQUIPMENT CABINET OMITTED FOR CLARITY

dish
wireless.

5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120

AIROSMITH

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NJJER01881D
234 SUYDAM AVENUE
JERSEY CITY, NJ 07304

SHEET TITLE
GROUNDING DETAILS

SHEET NUMBER

G-2

1. EXOTHERMIC WELD (2) TWO, #2 AWG BARE TINNED SOLID COPPER CONDUCTORS TO GROUND BAR. ROUTE CONDUCTORS TO BURIED GROUND RING AND PROVIDE PARALLEL EXOTHERMIC WELD.

2. ALL EXTERIOR GROUNDING HARDWARE SHALL BE STAINLESS STEEL 3/8" DIAMETER OR LARGER. ALL HARDWARE 18-8 STAINLESS STEEL INCLUDING LOCK WASHERS, COAT ALL SURFACES WITH AN ANTI-OXIDANT COMPOUND BEFORE MATING.

3. FOR GROUND BOND TO STEEL ONLY: COAT ALL SURFACES WITH AN ANTI-OXIDANT COMPOUND BEFORE MATING.

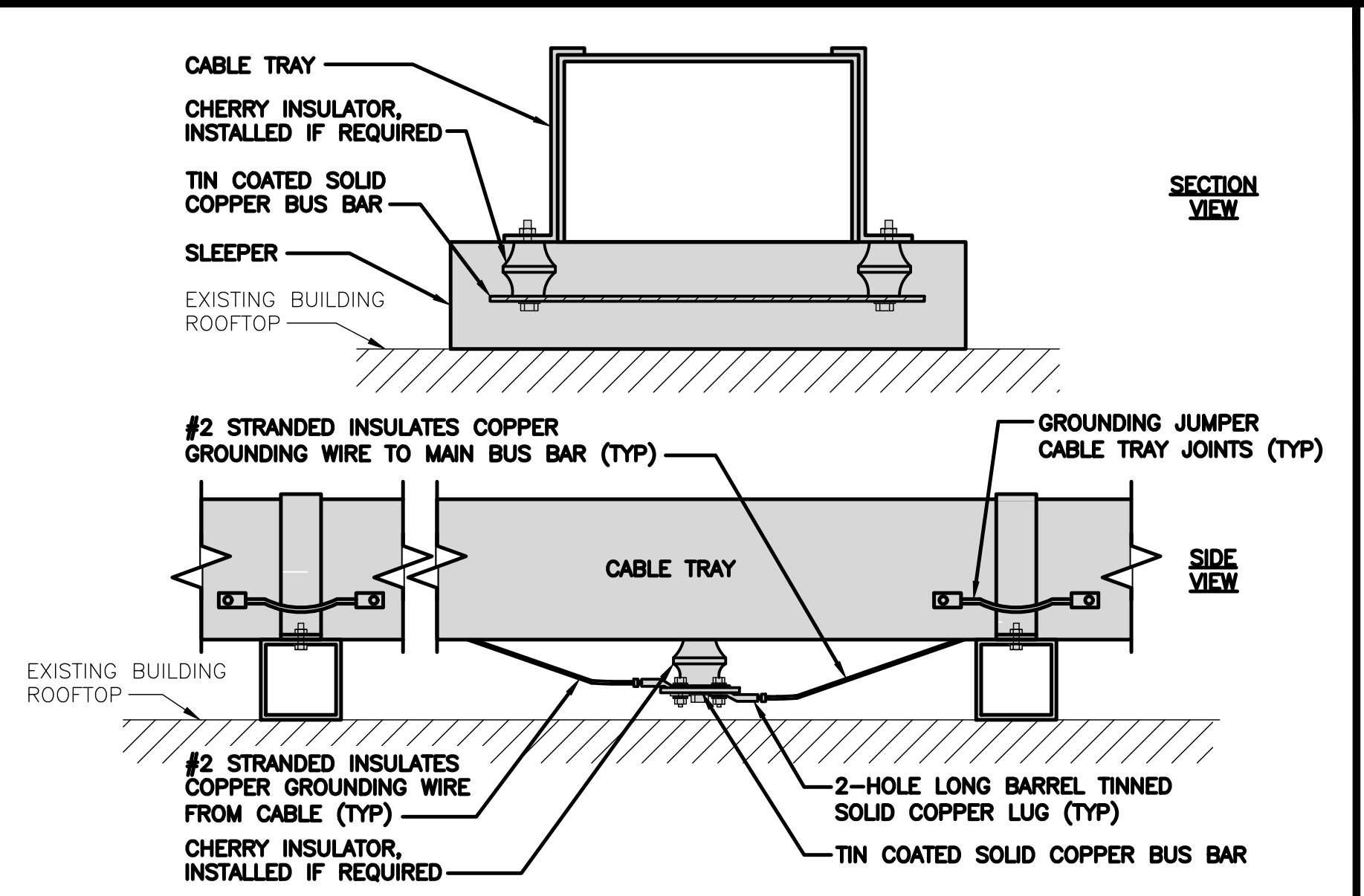
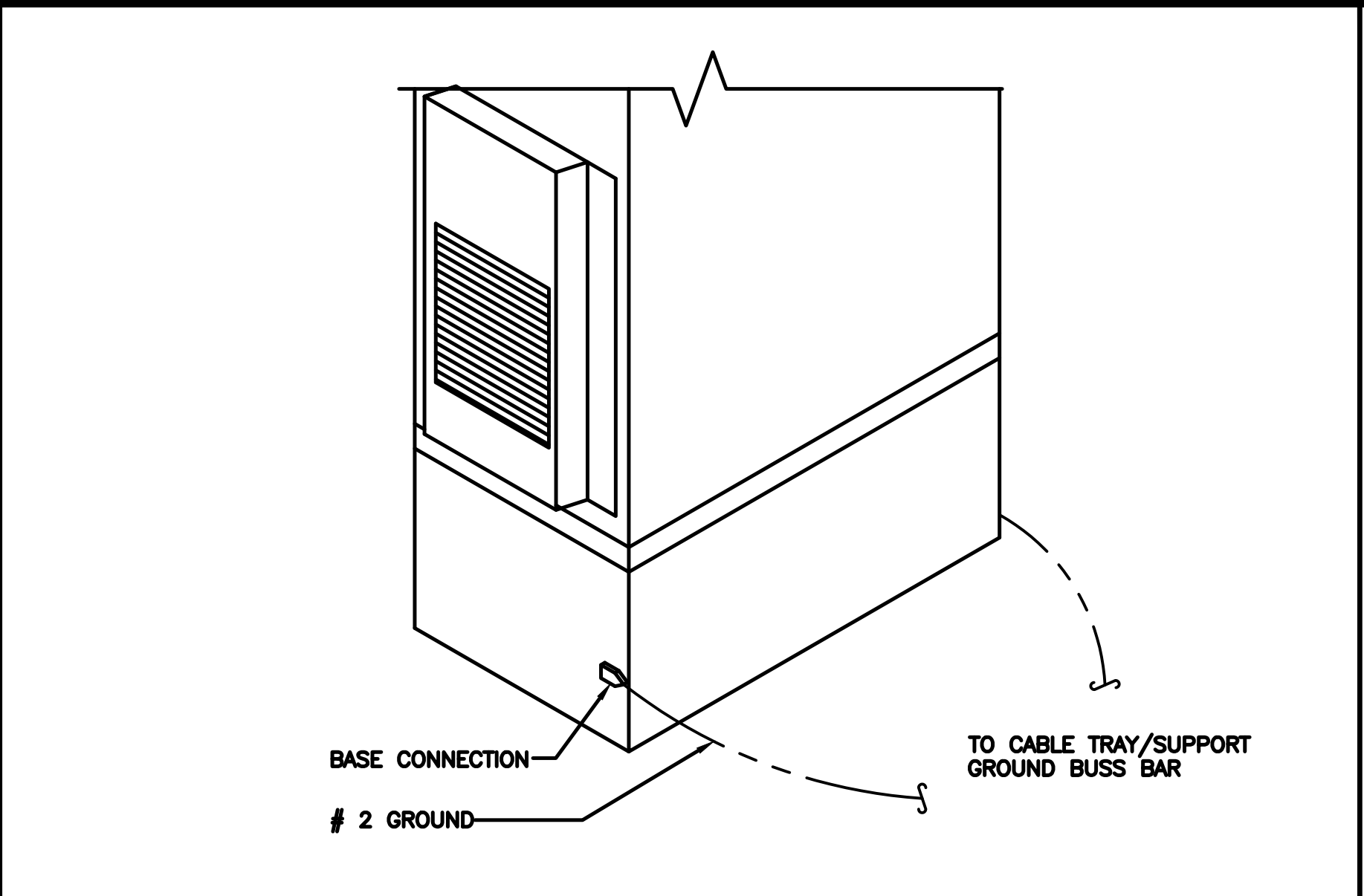
4. DO NOT INSTALL CABLE GROUNDING KIT AT A BEND AND ALWAYS DIRECT GROUND CONDUCTOR DOWN TO GROUNDING BUS.

5. NUT & WASHER SHALL BE PLACED ON THE FRONT SIDE OF THE GROUND BAR AND BOLTED ON THE BACK SIDE.

6. ALL GROUNDING PARTS AND EQUIPMENT TO BE SUPPLIED AND INSTALLED BY CONTRACTOR.

7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLING ADDITIONAL GROUND BAR AS REQUIRED.

8. ENSURE THE WIRE INSULATION TERMINATION IS WITHIN 1/8" OF THE BARREL (NO SHINERS).



TYPICAL GROUNDING NOTES

NO SCALE

1

OUTDOOR CABINET GROUNDING

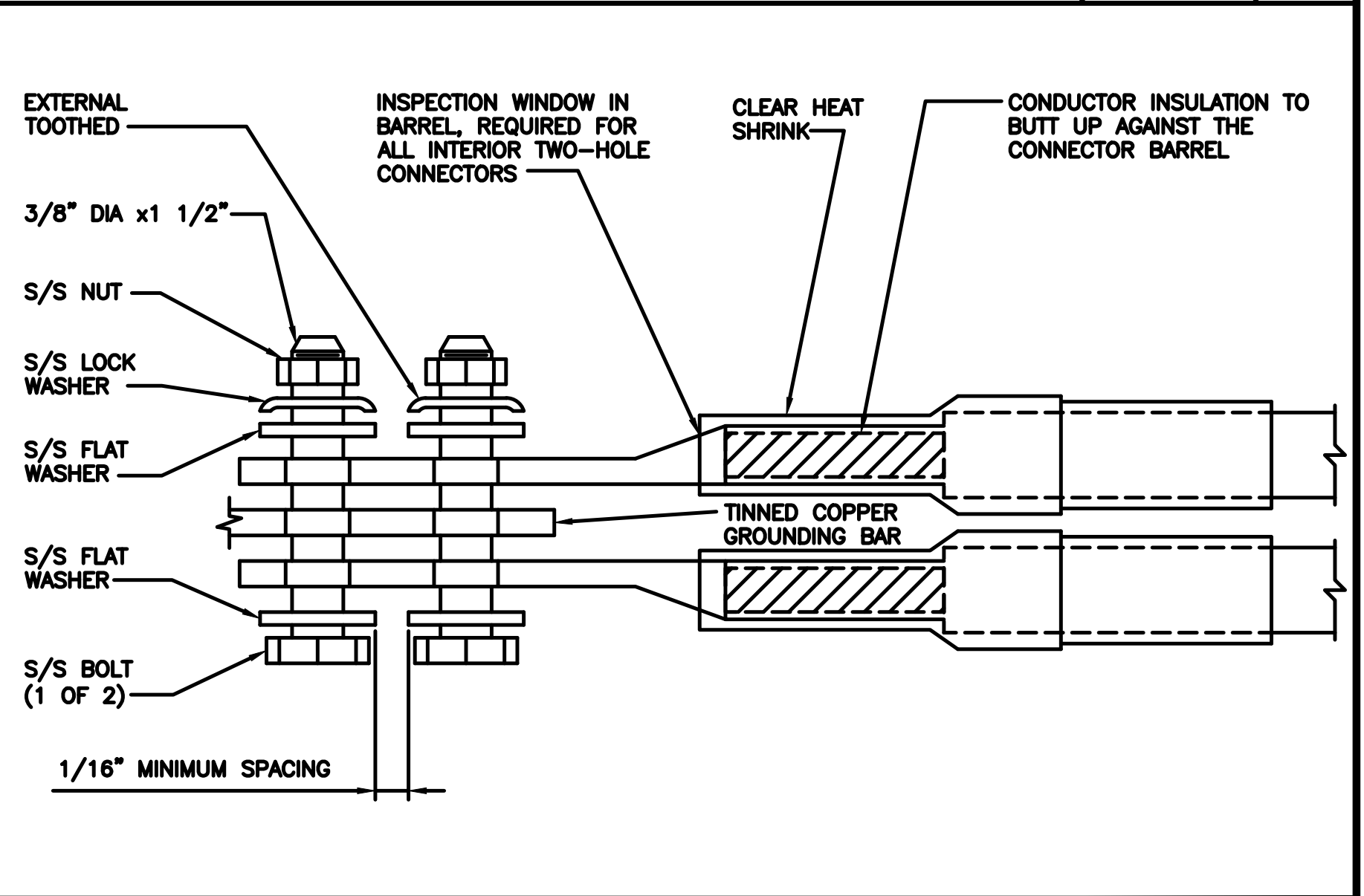
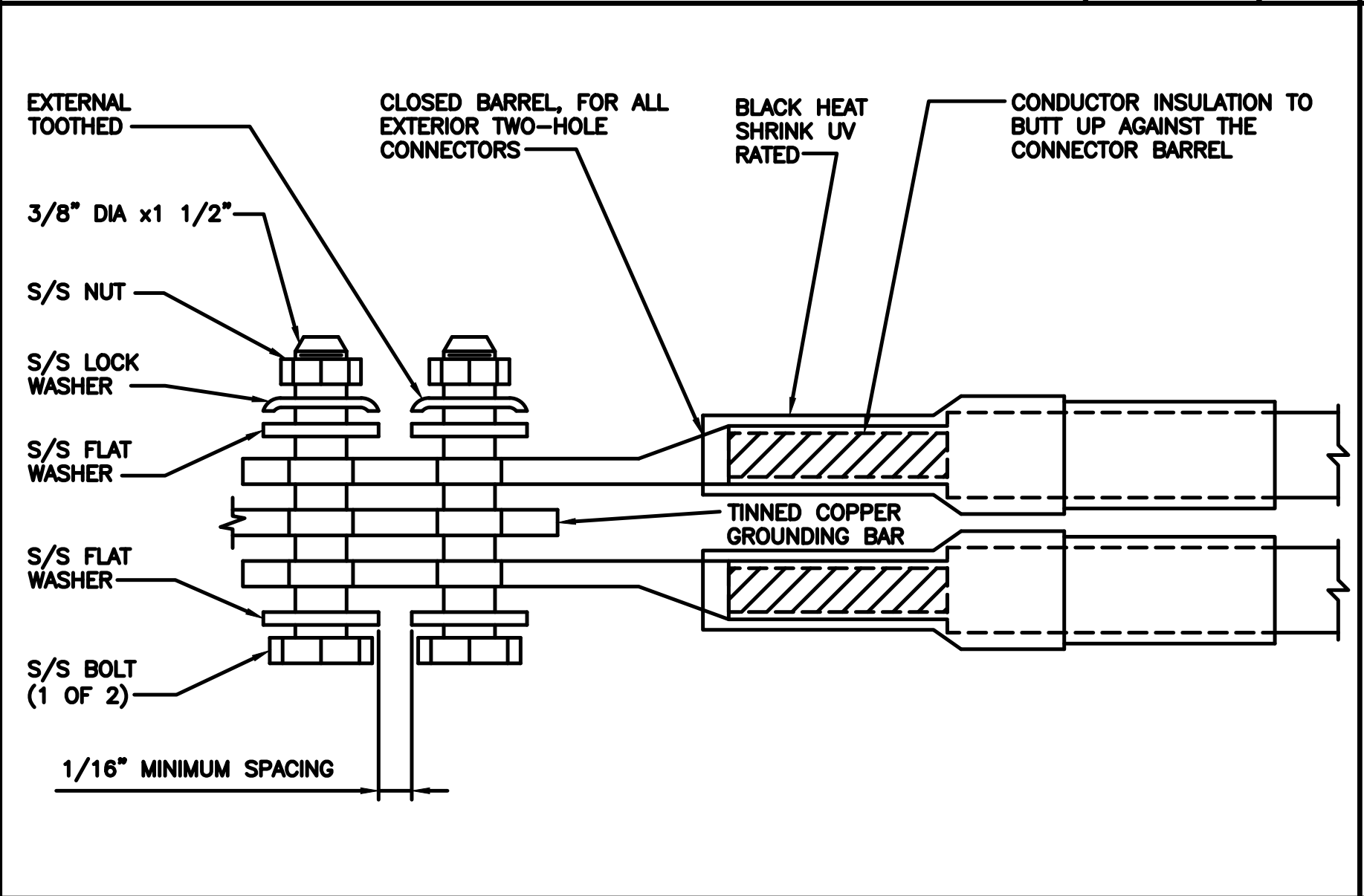
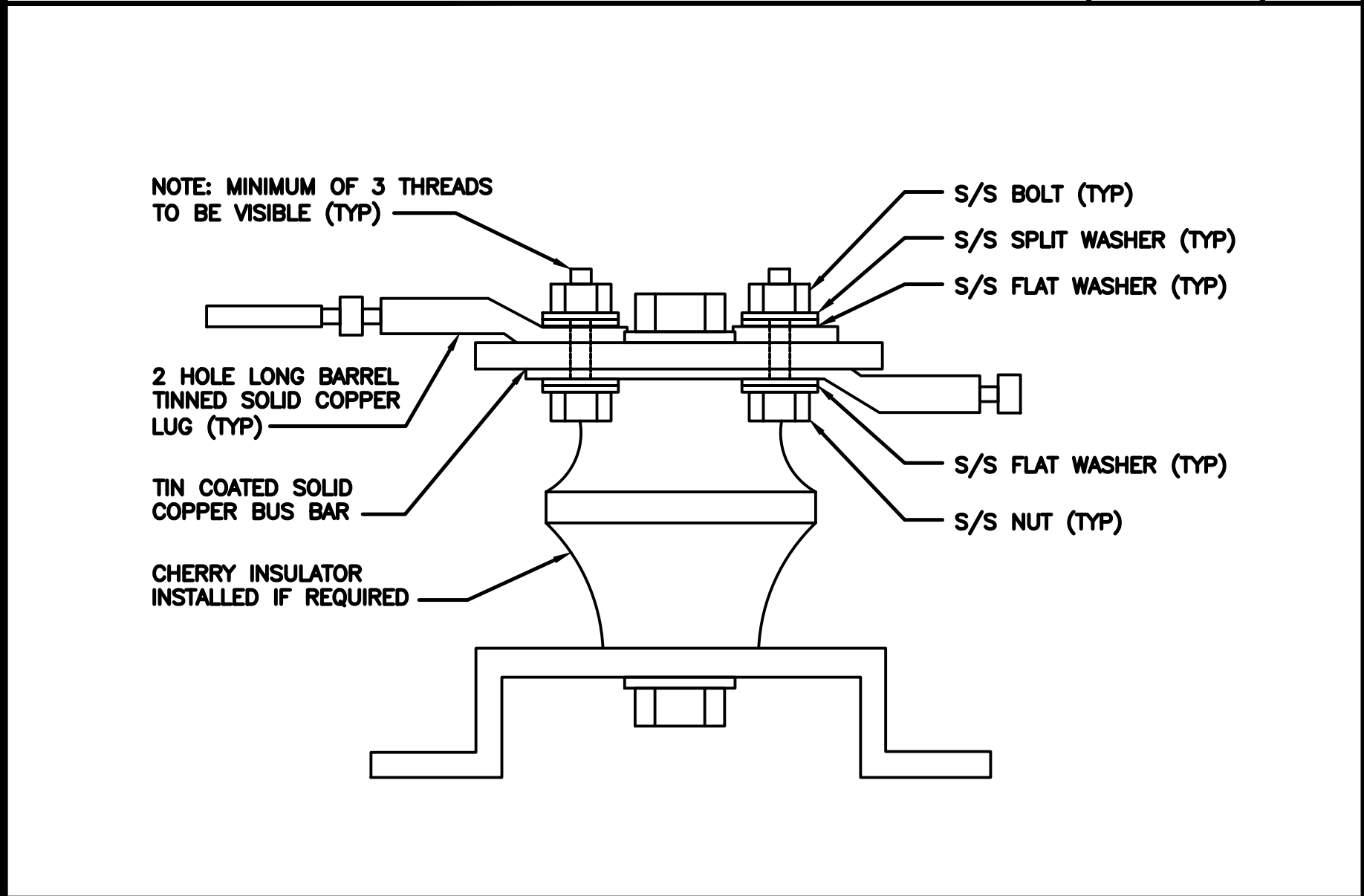
NO SCALE

2

TYPICAL CABLE TRAY GROUND BUSS BAR

NO SCALE

3



LUG DETAIL

NO SCALE

4

TYPICAL EXTERIOR TWO HOLE LUG

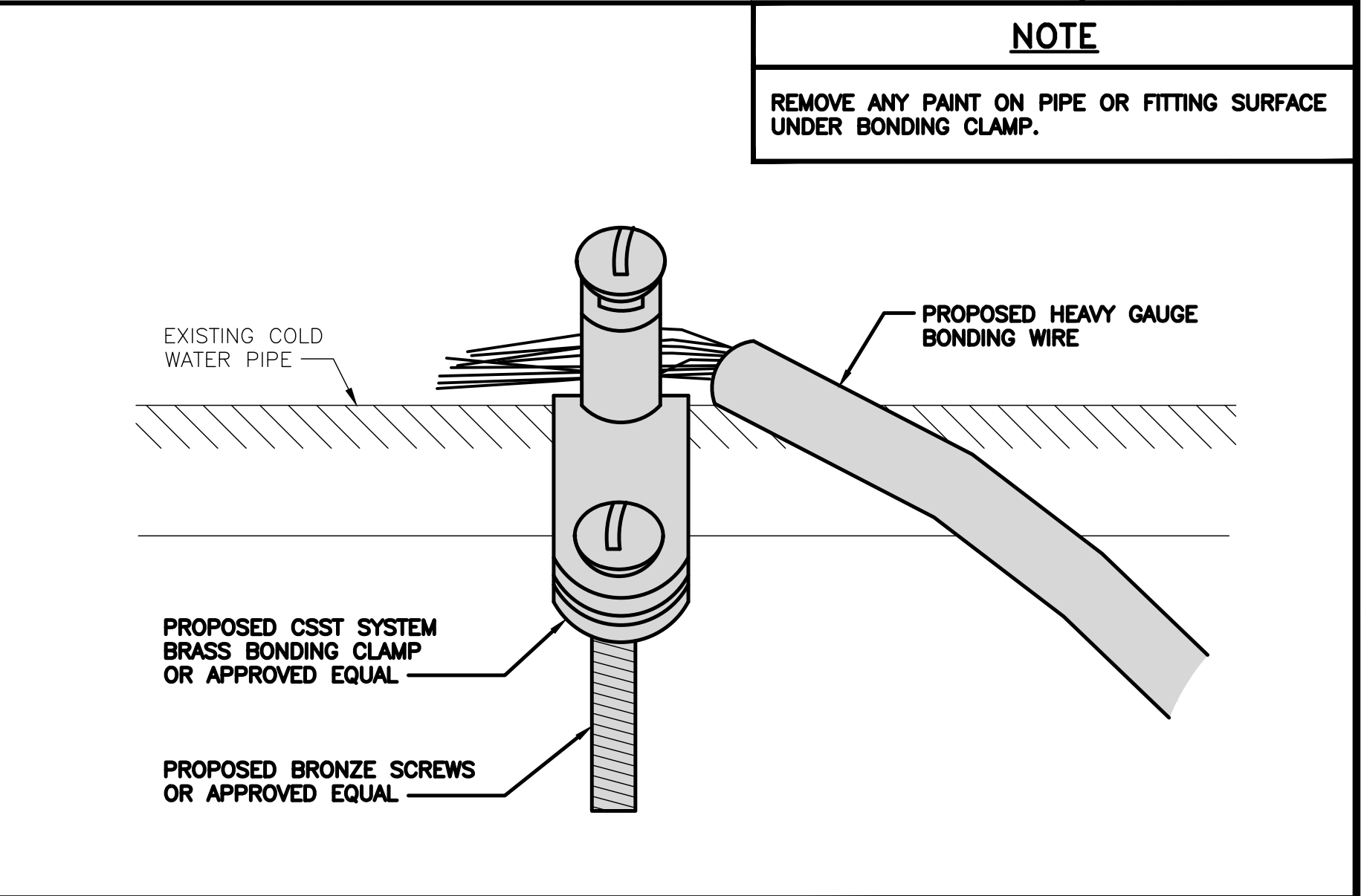
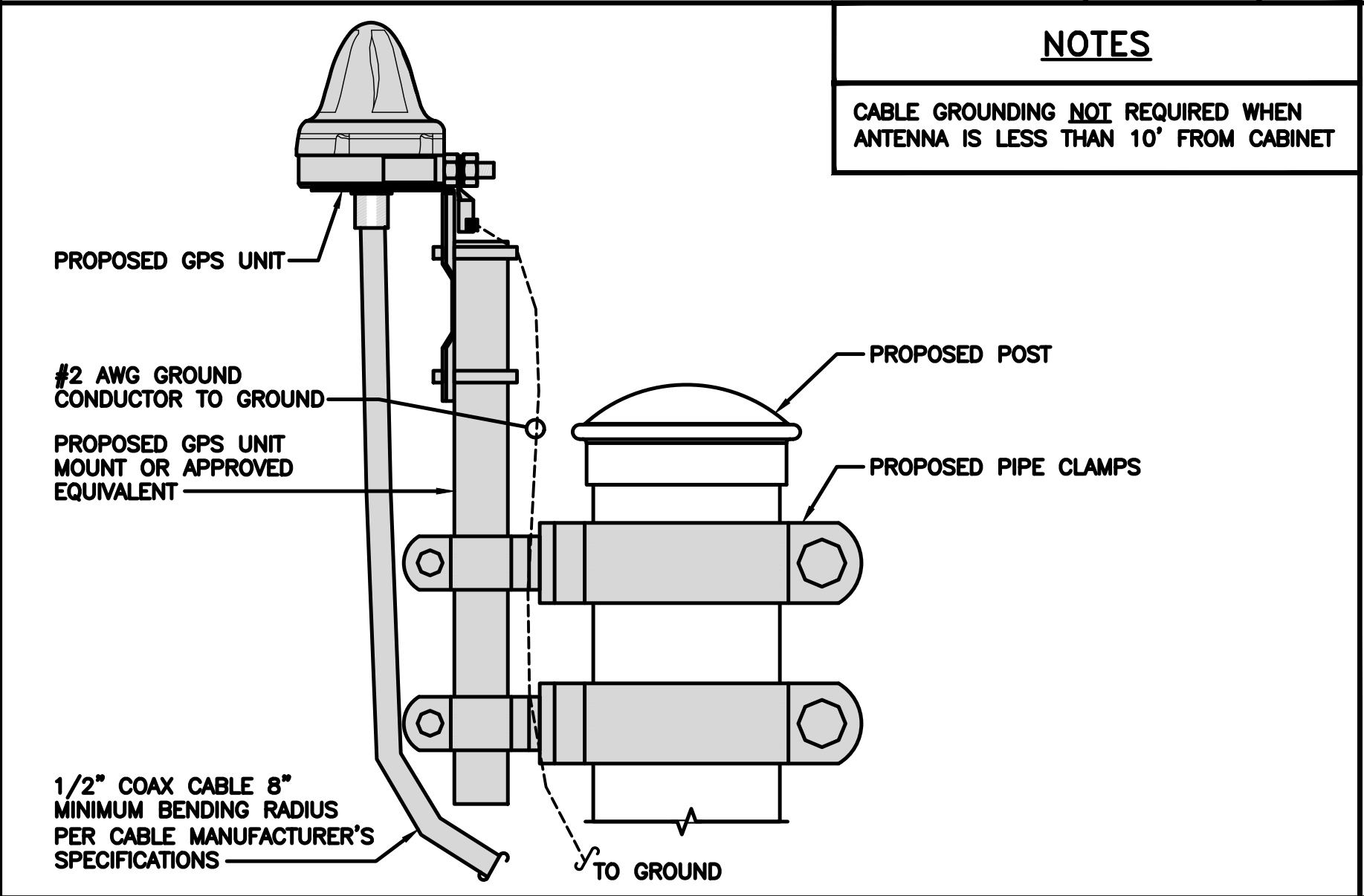
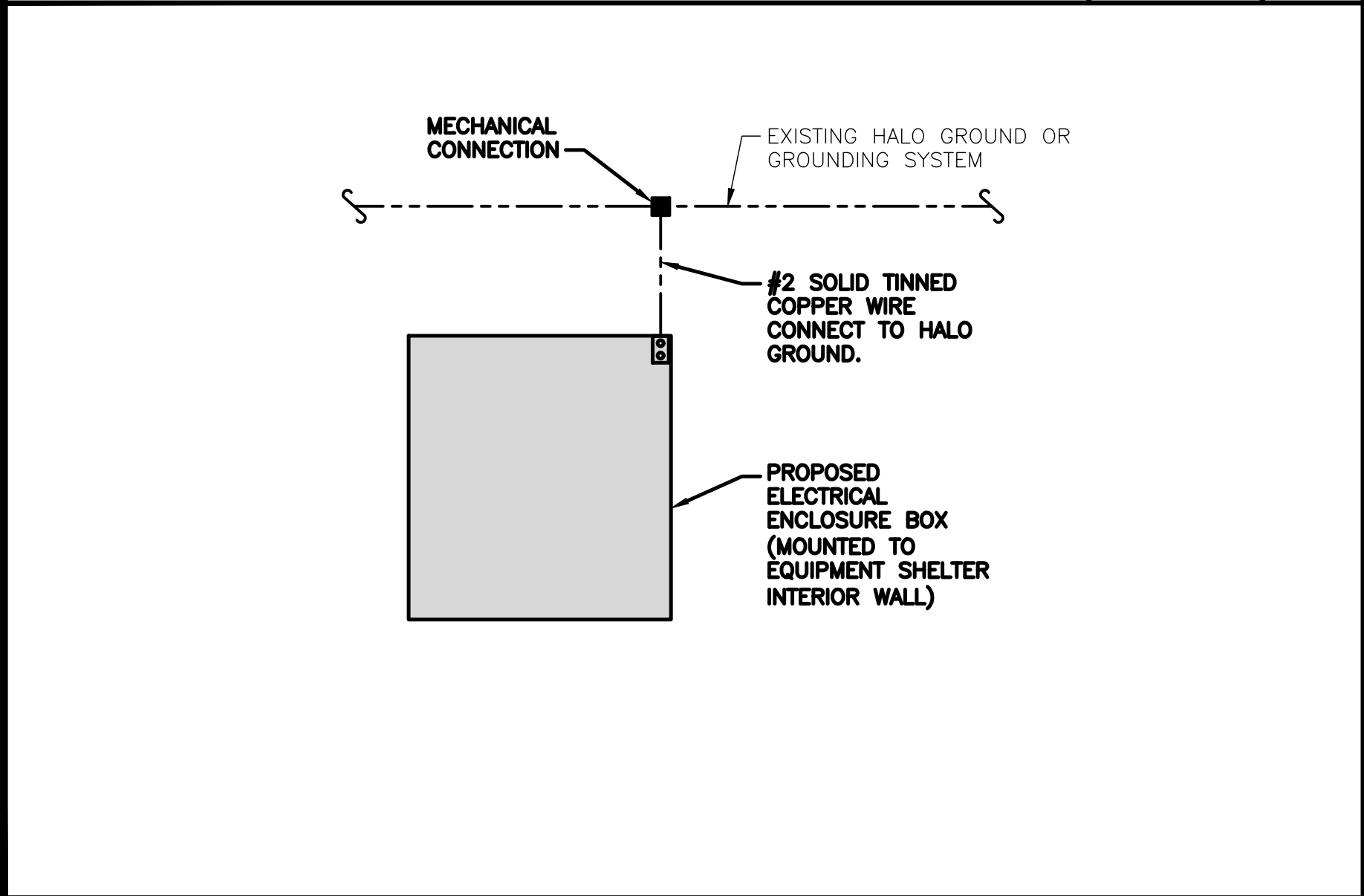
NO SCALE

5

TYPICAL INTERIOR TWO HOLE LUG

NO SCALE

6



TYPICAL INDOOR ELECTRICAL ENCLOSURE BOX GROUNDING DETAIL

NO SCALE

7

TYPICAL GPS UNIT GROUNDING

NO SCALE

8

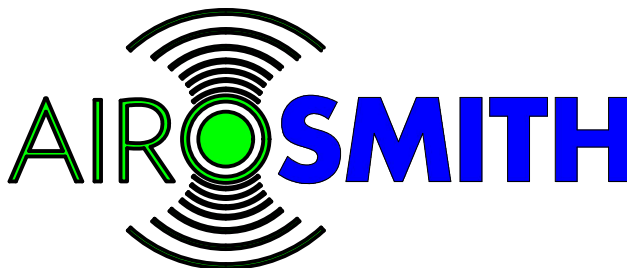
TYPICAL COLD WATER CONDUIT GROUNDING DETAIL

NO SCALE

9



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SHEET TITLE
GROUNDING DETAILS

SHEET NUMBER

G-3

EXOTHERMIC CONNECTION	●
MECHANICAL CONNECTION	■
BUSS BAR INSULATOR	▲
CHEMICAL ELECTROLYTIC GROUNDING SYSTEM	⊗
TEST CHEMICAL ELECTROLYTIC GROUNDING SYSTEM	⊗T
EXOTHERMIC WITH INSPECTION SLEEVE	⊗
GROUNDING BAR	⎓
GROUND ROD	⎓●
TEST GROUND ROD WITH INSPECTION SLEEVE	⎓⊗T
SINGLE POLE SWITCH	\$
DUPLEX RECEPTACLE	⦶
DUPLEX GFCI RECEPTACLE	⦶GFI
FLUORESCENT LIGHTING FIXTURE (2) TWO LAMPS 48–T8	F
SMOKE DETECTION (DC)	SD
EMERGENCY LIGHTING (DC)	⎓
SECURITY LIGHT W/PHOTOCELL LITHONIA ALXW LED–1–25A400/51K–SR4–120–PE–DDBTXD	⎓
CHAIN LINK FENCE	x x x x
WOOD/WROUGHT IRON FENCE	□ □ □ □ □ □
WALL STRUCTURE	▨
LEASE AREA	---
PROPERTY LINE (PL)	---
SETBACKS	---
ICE BRIDGE	▨
CABLE TRAY	▨
WATER LINE	— W — W — W — W — W —
UNDERGROUND POWER	— UGP — UGP — UGP — UGP — UGP —
UNDERGROUND TELCO	— UGT — UGT — UGT — UGT — UGT —
OVERHEAD POWER	— OHP — OHP — OHP — OHP —
OVERHEAD TELCO	— OHT — OHT — OHT — OHT —
UNDERGROUND TELCO/POWER	— UGT/P — UGT/P — UGT/P — UGT/P —
ABOVE GROUND POWER	— AGP — AGP — AGP — AGP — AGP —
ABOVE GROUND TELCO	— AGT — AGT — AGT — AGT — AGT —
ABOVE GROUND TELCO/POWER	— AGT/P — AGT/P — AGT/P — AGT/P —
WORKPOINT	W.P.
SECTION REFERENCE	XX X–X
DETAIL REFERENCE	XX X–X

AB	ANCHOR BOLT	IN	INCH
ABV	ABOVE	INT	INTERIOR
AC	ALTERNATING CURRENT	LB(S)	POUND(S)
ADDL	ADDITIONAL	LF	LINEAR FEET
AFF	ABOVE FINISHED FLOOR	LTE	LONG TERM EVOLUTION
AFG	ABOVE FINISHED GRADE	MAS	MASONRY
AGL	ABOVE GROUND LEVEL	MAX	MAXIMUM
AIC	AMPERAGE INTERRUPTION CAPACITY	MB	MACHINE BOLT
ALUM	ALUMINUM	MECH	MECHANICAL
ALT	ALTERNATE	MFR	MANUFACTURER
ANT	ANTENNA	MGB	MASTER GROUND BAR
APPROX	APPROXIMATE	MIN	MINIMUM
ARCH	ARCHITECTURAL	MISC	MISCELLANEOUS
ATS	AUTOMATIC TRANSFER SWITCH	MTL	METAL
AWG	AMERICAN WIRE GAUGE	MTS	MANUAL TRANSFER SWITCH
BATT	BATTERY	MW	MICROWAVE
BLDG	BUILDING	NEC	NATIONAL ELECTRIC CODE
BLK	BLOCK	NM	NEWTON METERS
BLKG	BLOCKING	NO.	NUMBER
BM	BEAM	#	NUMBER
BTC	BARE TINNED COPPER CONDUCTOR	NTS	NOT TO SCALE
BOF	BOTTOM OF FOOTING	OC	ON–CENTER
CAB	CABINET	OSHA	OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION
CANT	CANTILEVERED	OPNG	OPENING
CHG	CHARGING	P/C	PRECAST CONCRETE
CLG	CEILING	PCS	PERSONAL COMMUNICATION SERVICES
CLR	CLEAR	PCU	PRIMARY CONTROL UNIT
COL	COLUMN	PRC	PRIMARY RADIO CABINET
COMM	COMMON	PP	POLARIZING PRESERVING
CONC	CONCRETE	PSF	POUNDS PER SQUARE FOOT
CONSTR	CONSTRUCTION	PSI	POUNDS PER SQUARE INCH
DBL	DOUBLE	PT	PRESSURE TREATED
DC	DIRECT CURRENT	PWR	POWER CABINET
DEPT	DEPARTMENT	QTY	QUANTITY
DF	DOUGLAS FIR	RAD	RADIUS
DIA	DIAMETER	RECT	RECTIFIER
DIAG	DIAGONAL	REF	REFERENCE
DIM	DIMENSION	REINF	REINFORCEMENT
DWG	DRAWING	REQ'D	REQUIRED
DWL	DOWEL	RET	REMOTE ELECTRIC TILT
EA	EACH	RF	RADIO FREQUENCY
EC	ELECTRICAL CONDUCTOR	RMC	RIGID METALLIC CONDUIT
EL	ELEVATION	RRH	REMOTE RADIO HEAD
ELEC	ELECTRICAL	RRU	REMOTE RADIO UNIT
EMT	ELECTRICAL METALLIC TUBING	RWY	RACEWAY
ENG	ENGINEER	SCH	SCHEDULE
EQ	EQUAL	SHT	SHEET
EXP	EXPANSION	SIAD	SMART INTEGRATED ACCESS DEVICE
EXT	EXTERIOR	SIM	SIMILAR
EW	EACH WAY	SPEC	SPECIFICATION
FAB	FABRICATION	SQ	SQUARE
FF	FINISH FLOOR	SS	STAINLESS STEEL
FG	FINISH GRADE	STD	STANDARD
FIF	FACILITY INTERFACE FRAME	STL	STEEL
FIN	FINISH(ED)	TEMP	TEMPORARY
FLR	FLOOR	THK	THICKNESS
FDN	FOUNDATION	TMA	TOWER MOUNTED AMPLIFIER
FOC	FACE OF CONCRETE	TN	TOE NAIL
FOM	FACE OF MASONRY	TOA	TOP OF ANTENNA
FOS	FACE OF STUD	TOC	TOP OF CURB
FOW	FACE OF WALL	TOF	TOP OF FOUNDATION
FS	FINISH SURFACE	TOP	TOP OF PLATE (PARAPET)
FT	FOOT	TOS	TOP OF STEEL
FTG	FOOTING	TOW	TOP OF WALL
GA	GAUGE	TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSION
GEN	GENERATOR	TYP	TYPICAL
GFCI	GROUND FAULT CIRCUIT INTERRUPTER	UG	UNDERGROUND
GLB	GLUE LAMINATED BEAM	UL	UNDERWRITERS LABORATORY
GLV	GALVANIZED	UNO	UNLESS NOTED OTHERWISE
GPS	GLOBAL POSITIONING SYSTEM	UMTS	UNIVERSAL MOBILE TELECOMMUNICATIONS SYSTEM
GND	GROUND	UPS	UNINTERRUPTIBLE POWER SYSTEM (DC POWER PLANT)
GSM	GLOBAL SYSTEM FOR MOBILE	VIF	VERIFIED IN FIELD
HDG	HOT DIPPED GALVANIZED	W	WIDE
HDR	HEADER	W/	WITH
HGR	HANGER	WD	WOOD
HVAC	HEAT/VENTILATION/AIR CONDITIONING	WP	WEATHERPROOF
HT	HEIGHT	WT	WEIGHT
IGR	INTERIOR GROUND RING		

DISH Wireless L.L.C. TEMPLATE VERSION 48 – 2/21/2022

AIROSMITH

AIROSMITH DEVELOPMENT
AIROSMITH ENGINEERING
318 WEST AVE.
SARATOGA SPRINGS, NY 12866

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DRAWN BY:	CHECKED BY:	APPROVED BY:
JLM	JLM	ASW

RFDS REV #: N/A

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DOCUMENTS

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REV	DATE	DESCRIPTION
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A&E PROJECT NUMBER
DISH NJ 202201

DISH Wireless L.L.C.
PROJECT INFORMATION
NJJER01881D
234 SUYDAM AVENUE
JERSEY CITY, NJ 07304

SHEET TITLE
LEGEND AND
ABBREVIATIONS

SHEET NUMBER
GN-1



5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120



AIROSMITH DEVELOPMENT
AIROSMITH ENGINEERING
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SITE ACTIVITY REQUIREMENTS:

1. NOTICE TO PROCEED – NO WORK SHALL COMMENCE PRIOR TO CONTRACTOR RECEIVING A WRITTEN NOTICE TO PROCEED (NTP) AND THE ISSUANCE OF A PURCHASE ORDER. PRIOR TO ACCESSING/ENTERING THE SITE YOU MUST CONTACT THE DISH Wireless L.L.C. AND TOWER OWNER NOC & THE DISH Wireless L.L.C. AND TOWER OWNER CONSTRUCTION MANAGER.
2. "LOOK UP" – DISH Wireless L.L.C. AND TOWER OWNER SAFETY CLIMB REQUIREMENT:

THE INTEGRITY OF THE SAFETY CLIMB AND ALL COMPONENTS OF THE CLIMBING FACILITY SHALL BE CONSIDERED DURING ALL STAGES OF DESIGN, INSTALLATION, AND INSPECTION. TOWER MODIFICATION, MOUNT REINFORCEMENTS, AND/OR EQUIPMENT INSTALLATIONS SHALL NOT COMPROMISE THE INTEGRITY OR FUNCTIONAL USE OF THE SAFETY CLIMB OR ANY COMPONENTS OF THE CLIMBING FACILITY ON THE STRUCTURE. THIS SHALL INCLUDE, BUT NOT BE LIMITED TO: PINCHING OF THE WIRE ROPE, BENDING OF THE WIRE ROPE FROM ITS SUPPORTS, DIRECT CONTACT OR CLOSE PROXIMITY TO THE WIRE ROPE WHICH MAY CAUSE FRICTIONAL WEAR, IMPACT TO THE ANCHORAGE POINTS IN ANY WAY, OR TO IMPEDE/BLOCK ITS INTENDED USE. ANY COMPROMISED SAFETY CLIMB, INCLUDING EXISTING CONDITIONS MUST BE TAGGED OUT AND REPORTED TO YOUR DISH Wireless L.L.C. AND DISH Wireless L.L.C. AND TOWER OWNER POC OR CALL THE NOC TO GENERATE A SAFETY CLIMB MAINTENANCE AND CONTRACTOR NOTICE TICKET.
3. PRIOR TO THE START OF CONSTRUCTION, ALL REQUIRED JURISDICTIONAL PERMITS SHALL BE OBTAINED. THIS INCLUDES, BUT IS NOT LIMITED TO, BUILDING, ELECTRICAL, MECHANICAL, FIRE, FLOOD ZONE, ENVIRONMENTAL, AND ZONING. AFTER ONSITE ACTIVITIES AND CONSTRUCTION ARE COMPLETED, ALL REQUIRED PERMITS SHALL BE SATISFIED AND CLOSED OUT ACCORDING TO LOCAL JURISDICTIONAL REQUIREMENTS.
4. ALL CONSTRUCTION MEANS AND METHODS; INCLUDING BUT NOT LIMITED TO, ERECTION PLANS, RIGGING PLANS, CLIMBING PLANS, AND RESCUE PLANS SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR RESPONSIBLE FOR THE EXECUTION OF THE WORK CONTAINED HEREIN, AND SHALL MEET ANSI/ASSE A10.48 (LATEST EDITION); FEDERAL, STATE, AND LOCAL REGULATIONS; AND ANY APPLICABLE INDUSTRY CONSENSUS STANDARDS RELATED TO THE CONSTRUCTION ACTIVITIES BEING PERFORMED. ALL RIGGING PLANS SHALL ADHERE TO ANSI/ASSE A10.48 (LATEST EDITION) AND DISH Wireless L.L.C. AND TOWER OWNER STANDARDS, INCLUDING THE REQUIRED INVOLVEMENT OF A QUALIFIED ENGINEER FOR CLASS IV CONSTRUCTION, TO CERTIFY THE SUPPORTING STRUCTURE(S) IN ACCORDANCE WITH ANSI/TIA–322 (LATEST EDITION).
5. ALL SITE WORK TO COMPLY WITH DISH Wireless L.L.C. AND TOWER OWNER INSTALLATION STANDARDS FOR CONSTRUCTION ACTIVITIES ON DISH Wireless L.L.C. AND TOWER OWNER TOWER SITE AND LATEST VERSION OF ANSI/TIA–1019–A–2012 "STANDARD FOR INSTALLATION, ALTERATION, AND MAINTENANCE OF ANTENNA SUPPORTING STRUCTURES AND ANTENNAS."
6. IF THE SPECIFIED EQUIPMENT CAN NOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE CONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION FOR APPROVAL BY DISH Wireless L.L.C. AND TOWER OWNER PRIOR TO PROCEEDING WITH ANY SUCH CHANGE OF INSTALLATION.
7. ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS AND ORDINANCES. CONTRACTOR SHALL ISSUE ALL APPROPRIATE NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF THE WORK. ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL JURISDICTIONAL CODES, ORDINANCES AND APPLICABLE REGULATIONS.
8. THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER’S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.
9. THE CONTRACTOR SHALL CONTACT UTILITY LOCATING SERVICES INCLUDING PRIVATE LOCATES SERVICES PRIOR TO THE START OF CONSTRUCTION.
10. ALL EXISTING ACTIVE SEWER, WATER, GAS, ELECTRIC AND OTHER UTILITIES WHERE ENCOUNTERED IN THE WORK, SHALL BE PROTECTED AT ALL TIMES AND WHERE REQUIRED FOR THE PROPER EXECUTION OF THE WORK, SHALL BE RELOCATED AS DIRECTED BY CONTRACTOR. EXTREME CAUTION SHOULD BE USED BY THE CONTRACTOR WHEN EXCAVATING OR DRILLING PIERS AROUND OR NEAR UTILITIES. CONTRACTOR SHALL PROVIDE SAFETY TRAINING FOR THE WORKING CREW. THIS WILL INCLUDE BUT NOT BE LIMITED TO A) FALL PROTECTION B) CONFINED SPACE C) ELECTRICAL SAFETY D) TRENCHING AND EXCAVATION E) CONSTRUCTION SAFETY PROCEDURES.
11. ALL SITE WORK SHALL BE AS INDICATED ON THE STAMPED CONSTRUCTION DRAWINGS AND DISH PROJECT SPECIFICATIONS, LATEST APPROVED REVISION.
12. CONTRACTOR SHALL KEEP THE SITE FREE FROM ACCUMULATING WASTE MATERIAL, DEBRIS, AND TRASH AT THE COMPLETION OF THE WORK. IF NECESSARY, RUBBISH, STUMPS, DEBRIS, STICKS, STONES AND OTHER REFUSE SHALL BE REMOVED FROM THE SITE AND DISPOSED OF LEGALLY.
13. ALL EXISTING INACTIVE SEWER, WATER, GAS, ELECTRIC AND OTHER UTILITIES, WHICH INTERFERE WITH THE EXECUTION OF THE WORK, SHALL BE REMOVED AND/OR CAPPED, PLUGGED OR OTHERWISE DISCONTINUED AT POINTS WHICH WILL NOT INTERFERE WITH THE EXECUTION OF THE WORK, SUBJECT TO THE APPROVAL OF DISH Wireless L.L.C. AND TOWER OWNER, AND/OR LOCAL UTILITIES.
14. THE CONTRACTOR SHALL PROVIDE SITE SIGNAGE IN ACCORDANCE WITH THE TECHNICAL SPECIFICATION FOR SITE SIGNAGE REQUIRED BY LOCAL JURISDICTION AND SIGNAGE REQUIRED ON INDIVIDUAL PIECES OF EQUIPMENT, ROOMS, AND SHELTERS.
15. THE SITE SHALL BE GRADED TO CAUSE SURFACE WATER TO FLOW AWAY FROM THE CARRIER’S EQUIPMENT AND TOWER AREAS.
16. THE SUB GRADE SHALL BE COMPACTED AND BROUGHT TO A SMOOTH UNIFORM GRADE PRIOR TO FINISHED SURFACE APPLICATION.
17. THE AREAS OF THE OWNERS PROPERTY DISTURBED BY THE WORK AND NOT COVERED BY THE TOWER, EQUIPMENT OR DRIVEWAY, SHALL BE GRADED TO A UNIFORM SLOPE, AND STABILIZED TO PREVENT EROSION AS SPECIFIED ON THE CONSTRUCTION DRAWINGS AND/OR PROJECT SPECIFICATIONS.
18. CONTRACTOR SHALL MINIMIZE DISTURBANCE TO EXISTING SITE DURING CONSTRUCTION. EROSION CONTROL MEASURES, IF REQUIRED DURING CONSTRUCTION, SHALL BE IN CONFORMANCE WITH THE LOCAL GUIDELINES FOR EROSION AND SEDIMENT CONTROL.
19. THE CONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT CONTRACTOR’S EXPENSE TO THE SATISFACTION OF OWNER.
20. CONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OF ALL SCRAP MATERIALS SUCH AS COAXIAL CABLES AND OTHER ITEMS REMOVED FROM THE EXISTING FACILITY. ANTENNAS AND RADIOS REMOVED SHALL BE RETURNED TO THE OWNER’S DESIGNATED LOCATION.
21. CONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION. TRASH AND DEBRIS SHOULD BE REMOVED FROM SITE ON A DAILY BASIS.
22. NO FILL OR EMBANKMENT MATERIAL SHALL BE PLACED ON FROZEN GROUND. FROZEN MATERIALS, SNOW OR ICE SHALL NOT BE PLACED IN ANY FILL OR EMBANKMENT.

GENERAL NOTES:

- 1.FOR THE PURPOSE OF CONSTRUCTION DRAWING, THE FOLLOWING DEFINITIONS SHALL APPLY:

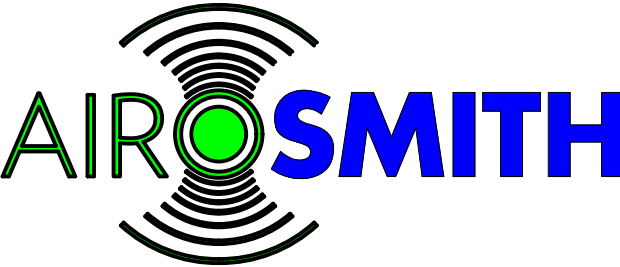
CONTRACTOR:GENERAL CONTRACTOR RESPONSIBLE FOR CONSTRUCTION

CARRIER:DISH Wireless L.L.C.

TOWER OWNER:TOWER OWNER
2. THESE DRAWINGS HAVE BEEN PREPARED USING STANDARDS OF PROFESSIONAL CARE AND COMPLETENESS NORMALLY EXERCISED UNDER SIMILAR CIRCUMSTANCES BY REPUTABLE ENGINEERS IN THIS OR SIMILAR LOCALITIES. IT IS ASSUMED THAT THE WORK DEPICTED WILL BE PERFORMED BY AN EXPERIENCED CONTRACTOR AND/OR WORKPEOPLE WHO HAVE A WORKING KNOWLEDGE OF THE APPLICABLE CODE STANDARDS AND REQUIREMENTS AND OF INDUSTRY ACCEPTED STANDARD GOOD PRACTICE. AS NOT EVERY CONDITION OR ELEMENT IS (OR CAN BE) EXPLICITLY SHOWN ON THESE DRAWINGS, THE CONTRACTOR SHALL USE INDUSTRY ACCEPTED STANDARD GOOD PRACTICE FOR MISCELLANEOUS WORK NOT EXPLICITLY SHOWN.
3. THESE DRAWINGS REPRESENT THE FINISHED STRUCTURE. THEY DO NOT INDICATE THE MEANS OR METHODS OF CONSTRUCTION. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR THE CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, AND PROCEDURES. THE CONTRACTOR SHALL PROVIDE ALL MEASURES NECESSARY FOR PROTECTION OF LIFE AND PROPERTY DURING CONSTRUCTION. SUCH MEASURES SHALL INCLUDE, BUT NOT BE LIMITED TO, BRACING, FORMWORK, SHORING, ETC. SITE VISITS BY THE ENGINEER OR HIS REPRESENTATIVE WILL NOT INCLUDE INSPECTION OF THESE ITEMS AND IS FOR STRUCTURAL OBSERVATION OF THE FINISHED STRUCTURE ONLY.
4. NOTES AND DETAILS IN THE CONSTRUCTION DRAWINGS SHALL TAKE PRECEDENCE OVER GENERAL NOTES AND TYPICAL DETAILS. WHERE NO DETAILS ARE SHOWN, CONSTRUCTION SHALL CONFORM TO SIMILAR WORK ON THE PROJECT, AND/OR AS PROVIDED FOR IN THE CONTRACT DOCUMENTS. WHERE DISCREPANCIES OCCUR BETWEEN PLANS, DETAILS, GENERAL NOTES, AND SPECIFICATIONS, THE GREATER, MORE STRICT REQUIREMENTS, SHALL GOVERN. IF FURTHER CLARIFICATION IS REQUIRED CONTACT THE ENGINEER OF RECORD.
5. SUBSTANTIAL EFFORT HAS BEEN MADE TO PROVIDE ACCURATE DIMENSIONS AND MEASUREMENTS ON THE DRAWINGS TO ASSIST IN THE FABRICATION AND/OR PLACEMENT OF CONSTRUCTION ELEMENTS BUT IT IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO FIELD VERIFY THE DIMENSIONS, MEASUREMENTS, AND/OR CLEARANCES SHOWN IN THE CONSTRUCTION DRAWINGS PRIOR TO FABRICATION OR CUTTING OF ANY NEW OR EXISTING CONSTRUCTION ELEMENTS. IF IT IS DETERMINED THAT THERE ARE DISCREPANCIES AND/OR CONFLICTS WITH THE CONSTRUCTION DRAWINGS THE ENGINEER OF RECORD IS TO BE NOTIFIED AS SOON AS POSSIBLE.
6. PRIOR TO THE SUBMISSION OF BIDS, THE BIDDING CONTRACTOR SHALL VISIT THE CELL SITE TO FAMILIARIZE WITH THE EXISTING CONDITIONS AND TO CONFIRM THAT THE WORK CAN BE ACCOMPLISHED AS SHOWN ON THE CONSTRUCTION DRAWINGS. ANY DISCREPANCY FOUND SHALL BE BROUGHT TO THE ATTENTION OF CARRIER POC AND TOWER OWNER.
7. ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS AND ORDINANCES. CONTRACTOR SHALL ISSUE ALL APPROPRIATE NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF THE WORK. ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL JURISDICTIONAL CODES, ORDINANCES AND APPLICABLE REGULATIONS.
8. UNLESS NOTED OTHERWISE, THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.
9. THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER’S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.
10. IF THE SPECIFIED EQUIPMENT CAN NOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE CONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION FOR APPROVAL BY THE CARRIER AND TOWER OWNER PRIOR TO PROCEEDING WITH ANY SUCH CHANGE OF INSTALLATION.
11. CONTRACTOR IS TO PERFORM A SITE INVESTIGATION, BEFORE SUBMITTING BIDS, TO DETERMINE THE BEST ROUTING OF ALL CONDUITS FOR POWER, AND TELCO AND FOR GROUNDING CABLES AS SHOWN IN THE POWER, TELCO, AND GROUNDING PLAN DRAWINGS.
12. THE CONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT CONTRACTOR’S EXPENSE TO THE SATISFACTION OF DISH Wireless L.L.C. AND TOWER OWNER
13. CONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OF ALL SCRAP MATERIALS SUCH AS COAXIAL CABLES AND OTHER ITEMS REMOVED FROM THE EXISTING FACILITY. ANTENNAS REMOVED SHALL BE RETURNED TO THE OWNER’S DESIGNATED LOCATION.
14. CONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION. TRASH AND DEBRIS SHOULD BE REMOVED FROM SITE ON A DAILY BASIS.



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JLM JLM ASW

RFDS REV #: N/A

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DISH Wireless L.L.C.
PROJECT INFORMATION

NJJER01881D
234 SUYDAM AVENUE
JERSEY CITY, NJ 07304

SHEET TITLE

GENERAL NOTES

SHEET NUMBER

GN-2

CONCRETE, FOUNDATIONS, AND REINFORCING STEEL:

1. ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH THE ACI 301, ACI 318, ACI 336, ASTM A184, ASTM A185 AND THE DESIGN AND CONSTRUCTION SPECIFICATION FOR CAST-IN-PLACE CONCRETE.
2. UNLESS NOTED OTHERWISE, SOIL BEARING PRESSURE USED FOR DESIGN OF SLABS AND FOUNDATIONS IS ASSUMED TO BE 1000 psf.
3. ALL CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH (f'c) OF 3000 psi AT 28 DAYS, UNLESS NOTED OTHERWISE. NO MORE THAN 90 MINUTES SHALL ELAPSE FROM BATCH TIME TO TIME OF PLACEMENT UNLESS APPROVED BY THE ENGINEER OF RECORD. TEMPERATURE OF CONCRETE SHALL NOT EXCEED 90°f AT TIME OF PLACEMENT.
4. CONCRETE EXPOSED TO FREEZE-THAW CYCLES SHALL CONTAIN AIR ENTRAINING ADMIXTURES. AMOUNT OF AIR ENTRAINMENT TO BE BASED ON SIZE OF AGGREGATE AND F3 CLASS EXPOSURE (VERY SEVERE). CEMENT USED TO BE TYPE II PORTLAND CEMENT WITH A MAXIMUM WATER-TO-CEMENT RATIO (W/C) OF 0.45.
5. ALL STEEL REINFORCING SHALL CONFORM TO ASTM A615. ALL WELDED WIRE FABRIC (WWF) SHALL CONFORM TO ASTM A185. ALL SPLICES SHALL BE CLASS "B" TENSION SPLICES, UNLESS NOTED OTHERWISE. ALL HOOKS SHALL BE STANDARD 90 DEGREE HOOKS, UNLESS NOTED OTHERWISE. YIELD STRENGTH (Fy) OF STANDARD DEFORMED BARS ARE AS FOLLOWS:
#4 BARS AND SMALLER 40 ksi
#5 BARS AND LARGER 60 ksi
6. THE FOLLOWING MINIMUM CONCRETE COVER SHALL BE PROVIDED FOR REINFORCING STEEL UNLESS SHOWN OTHERWISE ON DRAWINGS:

• CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH 3"

• CONCRETE EXPOSED TO EARTH OR WEATHER:

#6 BARS AND LARGER 2"

#5 BARS AND SMALLER 1-1/2"

• CONCRETE NOT EXPOSED TO EARTH OR WEATHER:

• SLAB AND WALLS 3/4"

• BEAMS AND COLUMNS 1-1/2"
7. A TOOLED EDGE OR A 3/4" CHAMFER SHALL BE PROVIDED AT ALL EXPOSED EDGES OF CONCRETE, UNLESS NOTED OTHERWISE, IN ACCORDANCE WITH ACI 301 SECTION 4.2.4.

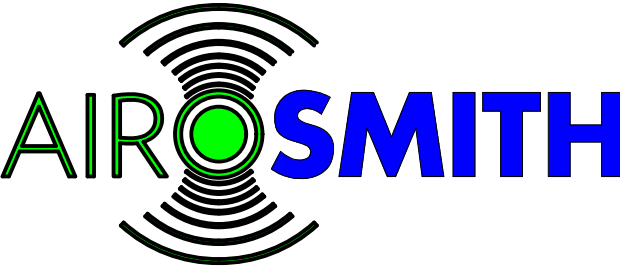
ELECTRICAL INSTALLATION NOTES:

1. ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS, NEC AND ALL APPLICABLE FEDERAL, STATE, AND LOCAL CODES/ORDINANCES.
2. CONDUIT ROUTINGS ARE SCHEMATIC. CONTRACTOR SHALL INSTALL CONDUITS SO THAT ACCESS TO EQUIPMENT IS NOT BLOCKED AND TRIP HAZARDS ARE ELIMINATED.
3. WIRING, RACEWAY AND SUPPORT METHODS AND MATERIALS SHALL COMPLY WITH THE REQUIREMENTS OF THE NEC.
4. ALL CIRCUITS SHALL BE SEGREGATED AND MAINTAIN MINIMUM CABLE SEPARATION AS REQUIRED BY THE NEC.
- 4.1. ALL EQUIPMENT SHALL BEAR THE UNDERWRITERS LABORATORIES LABEL OF APPROVAL, AND SHALL CONFORM TO REQUIREMENT OF THE NATIONAL ELECTRICAL CODE.
- 4.2. ALL OVERCURRENT DEVICES SHALL HAVE AN INTERRUPTING CURRENT RATING THAT SHALL BE GREATER THAN THE SHORT CIRCUIT CURRENT TO WHICH THEY ARE SUBJECTED, 22,000 AIC MINIMUM. VERIFY AVAILABLE SHORT CIRCUIT CURRENT DOES NOT EXCEED THE RATING OF ELECTRICAL EQUIPMENT IN ACCORDANCE WITH ARTICLE 110.24 NEC OR THE MOST CURRENT ADOPTED CODE PRE THE GOVERNING JURISDICTION.
5. EACH END OF EVERY POWER PHASE CONDUCTOR, GROUNDING CONDUCTOR, AND TELCO CONDUCTOR OR CABLE SHALL BE LABELED WITH COLOR-CODED INSULATION OR ELECTRICAL TAPE (3M BRAND, 1/2" PLASTIC ELECTRICAL TAPE WITH UV PROTECTION, OR EQUAL). THE IDENTIFICATION METHOD SHALL CONFORM WITH NEC AND OSHA.
6. ALL ELECTRICAL COMPONENTS SHALL BE CLEARLY LABELED WITH LAMICOID TAGS SHOWING THEIR RATED VOLTAGE, PHASE CONFIGURATION, WIRE CONFIGURATION, POWER OR AMPACITY RATING AND BRANCH CIRCUIT ID NUMBERS (i.e. PANEL BOARD AND CIRCUIT ID'S).
7. PANEL BOARDS (ID NUMBERS) SHALL BE CLEARLY LABELED WITH PLASTIC LABELS.
8. TIE WRAPS ARE NOT ALLOWED.
9. ALL POWER AND EQUIPMENT GROUND WIRING IN TUBING OR CONDUIT SHALL BE SINGLE COPPER CONDUCTOR (#14 OR LARGER) WITH TYPE THHW, THWN, THWN-2, XHHW, XHHW-2, THW, THW-2, RHW, OR RHW-2 INSULATION UNLESS OTHERWISE SPECIFIED.
10. SUPPLEMENTAL EQUIPMENT GROUND WIRING LOCATED INDOORS SHALL BE SINGLE COPPER CONDUCTOR (#6 OR LARGER) WITH TYPE THHW, THWN, THWN-2, XHHW, XHHW-2, THW, THW-2, RHW, OR RHW-2 INSULATION UNLESS OTHERWISE SPECIFIED.
11. POWER AND CONTROL WIRING IN FLEXIBLE CORD SHALL BE MULTI-CONDUCTOR, TYPE SOOW CORD (#14 OR LARGER) UNLESS OTHERWISE SPECIFIED.
12. POWER AND CONTROL WIRING FOR USE IN CABLE TRAY SHALL BE MULTI-CONDUCTOR, TYPE TC CABLE (#14 OR LARGER), WITH TYPE THHW, THWN, THWN-2, XHHW, XHHW-2, THW, THW-2, RHW, OR RHW-2 INSULATION UNLESS OTHERWISE SPECIFIED.
13. ALL POWER AND GROUNDING CONNECTIONS SHALL BE CRIMP-STYLE, COMPRESSION WIRE LUGS AND WIRE NUTS BY THOMAS AND BETTS (OR EQUAL). LUGS AND WIRE NUTS SHALL BE RATED FOR OPERATION NOT LESS THAN 75° C (90° C IF AVAILABLE).
14. RACEWAY AND CABLE TRAY SHALL BE LISTED OR LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANSI/IEEE AND NEC.
15. ELECTRICAL METALLIC TUBING (EMT), INTERMEDIATE METAL CONDUIT (IMC), OR RIGID METAL CONDUIT (RMC) SHALL BE USED FOR EXPOSED INDOOR LOCATIONS.

16. ELECTRICAL METALLIC TUBING (EMT) OR METAL-CLAD CABLE (MC) SHALL BE USED FOR CONCEALED INDOOR LOCATIONS.
17. SCHEDULE 40 PVC UNDERGROUND ON STRAIGHTS AND SCHEDULE 80 PVC FOR ALL ELBOWS/90s AND ALL APPROVED ABOVE GRADE PVC CONDUIT.
18. LIQUID-TIGHT FLEXIBLE METALLIC CONDUIT (LIQUID-TITE FLEX) SHALL BE USED INDOORS AND OUTDOORS, WHERE VIBRATION OCCURS OR FLEXIBILITY IS NEEDED.
19. CONDUIT AND TUBING FITTINGS SHALL BE THREADED OR COMPRESSION-TYPE AND APPROVED FOR THE LOCATION USED. SET SCREW FITTINGS ARE NOT ACCEPTABLE.
20. CABINETS, BOXES AND WIRE WAYS SHALL BE LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANSI/IEEE AND THE NEC.
21. WIREWAYS SHALL BE METAL WITH AN ENAMEL FINISH AND INCLUDE A HINGED COVER, DESIGNED TO SWING OPEN DOWNWARDS (WIREMOLD SPECMATE WIREWAY).
22. SLOTTED WIRING DUCT SHALL BE PVC AND INCLUDE COVER (PANDUIT TYPE E OR EQUAL).
23. CONDUITS SHALL BE FASTENED SECURELY IN PLACE WITH APPROVED NON-PERFORATED STRAPS AND HANGERS. EXPLOSIVE DEVICES (i.e. POWDER-ACTUATED) FOR ATTACHING HANGERS TO STRUCTURE WILL NOT BE PERMITTED. CLOSELY FOLLOW THE LINES OF THE STRUCTURE, MAINTAIN CLOSE PROXIMITY TO THE STRUCTURE AND KEEP CONDUITS IN TIGHT ENVELOPES. CHANGES IN DIRECTION TO ROUTE AROUND OBSTACLES SHALL BE MADE WITH CONDUIT OUTLET BODIES. CONDUIT SHALL BE INSTALLED IN A NEAT AND WORKMANLIKE MANNER. PARALLEL AND PERPENDICULAR TO STRUCTURE WALL AND CEILING LINES. ALL CONDUIT SHALL BE FISHED TO CLEAR OBSTRUCTIONS. ENDS OF CONDUITS SHALL BE TEMPORARILY CAPPED FLUSH TO FINISH GRADE TO PREVENT CONCRETE, PLASTER OR DIRT FROM ENTERING. CONDUITS SHALL BE RIGIDLY CLAMPED TO BOXES BY GALVANIZED MALLEABLE IRON BUSHING ON INSIDE AND GALVANIZED MALLEABLE IRON LOCKNUT ON OUTSIDE AND INSIDE.
24. EQUIPMENT CABINETS, TERMINAL BOXES, JUNCTION BOXES AND PULL BOXES SHALL BE GALVANIZED OR EPOXY-COATED SHEET STEEL. SHALL MEET OR EXCEED UL 50 AND BE RATED NEMA 1 (OR BETTER) FOR INTERIOR LOCATIONS AND NEMA 3 (OR BETTER) FOR EXTERIOR LOCATIONS.
25. METAL RECEPTACLE, SWITCH AND DEVICE BOXES SHALL BE GALVANIZED, EPOXY-COATED OR NON-CORRODING; SHALL MEET OR EXCEED UL 514A AND NEMA OS 1 AND BE RATED NEMA 1 (OR BETTER) FOR INTERIOR LOCATIONS AND WEATHER PROTECTED (WP OR BETTER) FOR EXTERIOR LOCATIONS.
26. NONMETALLIC RECEPTACLE, SWITCH AND DEVICE BOXES SHALL MEET OR EXCEED NEMA OS 2 (NEWEST REVISION) AND BE RATED NEMA 1 (OR BETTER) FOR INTERIOR LOCATIONS AND WEATHER PROTECTED (WP OR BETTER) FOR EXTERIOR LOCATIONS.
27. THE CONTRACTOR SHALL NOTIFY AND OBTAIN NECESSARY AUTHORIZATION FROM THE CARRIER AND/OR DISH Wireless L.L.C. AND TOWER OWNER BEFORE COMMENCING WORK ON THE AC POWER DISTRIBUTION PANELS.
28. THE CONTRACTOR SHALL PROVIDE NECESSARY TAGGING ON THE BREAKERS, CABLES AND DISTRIBUTION PANELS IN ACCORDANCE WITH THE APPLICABLE CODES AND STANDARDS TO SAFEGUARD LIFE AND PROPERTY.
29. INSTALL LAMICOID LABEL ON THE METER CENTER TO SHOW "DISH Wireless L.L.C.".
30. ALL EMPTY/SPARE CONDUITS THAT ARE INSTALLED ARE TO HAVE A METERED MULE TAPE PULL CORD INSTALLED.



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DRAWN BY: CHECKED BY: APPROVED BY:

JLM JLM ASW

RFDS REV #: N/A

PRELIMINARY DOCUMENTS

SUBMITTALS		
REV	DATE	DESCRIPTION
A	12/14/2022	ISSUED FOR REVIEW

A&E PROJECT NUMBER
DISH NJ 202201

DISH Wireless L.L.C.
PROJECT INFORMATION

NJJER01881D
234 SUYDAM AVENUE
JERSEY CITY, NJ 07304

SHEET TITLE
GENERAL NOTES

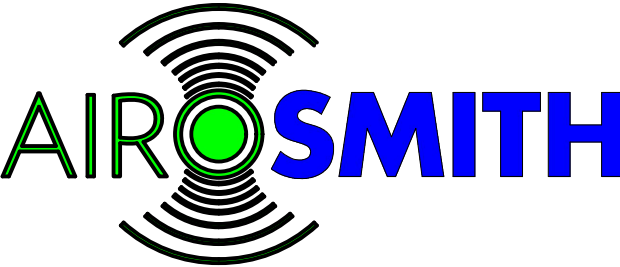
SHEET NUMBER
GN-3

GROUNDING NOTES:

1. ALL GROUND ELECTRODE SYSTEMS (INCLUDING TELECOMMUNICATION, RADIO, LIGHTNING PROTECTION AND AC POWER GES’S) SHALL BE BONDED TOGETHER AT OR BELOW GRADE, BY TWO OR MORE COPPER BONDING CONDUCTORS IN ACCORDANCE WITH THE NEC.
2. THE CONTRACTOR SHALL PERFORM IEEE FALL–OF–POTENTIAL RESISTANCE TO EARTH TESTING (PER IEEE 1100 AND 81) FOR GROUND ELECTRODE SYSTEMS, THE CONTRACTOR SHALL FURNISH AND INSTALL SUPPLEMENTAL GROUND ELECTRODES AS NEEDED TO ACHIEVE A TEST RESULT OF 5 OHMS OR LESS.
3. THE CONTRACTOR IS RESPONSIBLE FOR PROPERLY SEQUENCING GROUNDING AND UNDERGROUND CONDUIT INSTALLATION AS TO PREVENT ANY LOSS OF CONTINUITY IN THE GROUNDING SYSTEM OR DAMAGE TO THE CONDUIT AND PROVIDE TESTING RESULTS.
4. METAL CONDUIT AND TRAY SHALL BE GROUNDED AND MADE ELECTRICALLY CONTINUOUS WITH LISTED BONDING FITTINGS OR BY BONDING ACROSS THE DISCONTINUITY WITH #6 COPPER WIRE UL APPROVED GROUNDING TYPE CONDUIT CLAMPS.
5. METAL RACEWAY SHALL NOT BE USED AS THE NEC REQUIRED EQUIPMENT GROUND CONDUCTOR. STRANDED COPPER CONDUCTORS WITH GREEN INSULATION, SIZED IN ACCORDANCE WITH THE NEC, SHALL BE FURNISHED AND INSTALLED WITH THE POWER CIRCUITS TO BTS EQUIPMENT.
6. EACH CABINET FRAME SHALL BE DIRECTLY CONNECTED TO THE MASTER GROUND BAR WITH GREEN INSULATED SUPPLEMENTAL EQUIPMENT GROUND WIRES, #6 STRANDED COPPER OR LARGER FOR INDOOR BTS; #2 BARE SOLID TINNED COPPER FOR OUTDOOR BTS.
7. CONNECTIONS TO THE GROUND BUS SHALL NOT BE DOUBLED UP OR STACKED BACK TO BACK CONNECTIONS ON OPPOSITE SIDE OF THE GROUND BUS ARE PERMITTED.
8. ALL EXTERIOR GROUND CONDUCTORS BETWEEN EQUIPMENT/GROUND BARS AND THE GROUND RING SHALL BE #2 SOLID TINNED COPPER UNLESS OTHERWISE INDICATED.
9. ALUMINUM CONDUCTOR OR COPPER CLAD STEEL CONDUCTOR SHALL NOT BE USED FOR GROUNDING CONNECTIONS.
10. USE OF 90° BENDS IN THE PROTECTION GROUNDING CONDUCTORS SHALL BE AVOIDED WHEN 45° BENDS CAN BE ADEQUATELY SUPPORTED.
11. EXOTHERMIC WELDS SHALL BE USED FOR ALL GROUNDING CONNECTIONS BELOW GRADE.
12. ALL GROUND CONNECTIONS ABOVE GRADE (INTERIOR AND EXTERIOR) SHALL BE FORMED USING HIGH PRESS CRIMPS.
13. COMPRESSION GROUND CONNECTIONS MAY BE REPLACED BY EXOTHERMIC WELD CONNECTIONS.
14. ICE BRIDGE BONDING CONDUCTORS SHALL BE EXOTHERMICALLY BONDED OR BOLTED TO THE BRIDGE AND THE TOWER GROUND BAR.
15. APPROVED ANTIOXIDANT COATINGS (i.e. CONDUCTIVE GEL OR PASTE) SHALL BE USED ON ALL COMPRESSION AND BOLTED GROUND CONNECTIONS.
16. ALL EXTERIOR GROUND CONNECTIONS SHALL BE COATED WITH A CORROSION RESISTANT MATERIAL.
17. MISCELLANEOUS ELECTRICAL AND NON–ELECTRICAL METAL BOXES, FRAMES AND SUPPORTS SHALL BE BONDED TO THE GROUND RING, IN ACCORDANCE WITH THE NEC.
18. BOND ALL METALLIC OBJECTS WITHIN 6 ft OF MAIN GROUND RING WITH (1) #2 BARE SOLID TINNED COPPER GROUND CONDUCTOR.
19. GROUND CONDUCTORS USED FOR THE FACILITY GROUNDING AND LIGHTNING PROTECTION SYSTEMS SHALL NOT BE ROUTED THROUGH METALLIC OBJECTS THAT FORM A RING AROUND THE CONDUCTOR, SUCH AS METALLIC CONDUITS, METAL SUPPORT CLIPS OR SLEEVES THROUGH WALLS OR FLOORS. WHEN IT IS REQUIRED TO BE HOUSED IN CONDUIT TO MEET CODE REQUIREMENTS OR LOCAL CONDITIONS, NON–METALLIC MATERIAL SUCH AS PVC CONDUIT SHALL BE USED. WHERE USE OF METAL CONDUIT IS UNAVOIDABLE (i.e., NONMETALLIC CONDUIT PROHIBITED BY LOCAL CODE) THE GROUND CONDUCTOR SHALL BE BONDED TO EACH END OF THE METAL CONDUIT.
20. ALL GROUNDS THAT TRANSITION FROM BELOW GRADE TO ABOVE GRADE MUST BE #2 BARE SOLID TINNED COPPER IN 3/4” NON–METALLIC, FLEXIBLE CONDUIT FROM 24” BELOW GRADE TO WITHIN 3” TO 6” OF CAD–WELD TERMINATION POINT. THE EXPOSED END OF THE CONDUIT MUST BE SEALED WITH SILICONE CAULK. (ADD TRANSITIONING GROUND STANDARD DETAIL AS WELL).
21. BUILDINGS WHERE THE MAIN GROUNDING CONDUCTORS ARE REQUIRED TO BE ROUTED TO GRADE, THE CONTRACTOR SHALL ROUTE TWO GROUNDING CONDUCTORS FROM THE ROOFTOP, TOWERS, AND WATER TOWERS GROUNDING RING, TO THE EXISTING GROUNDING SYSTEM, THE GROUNDING CONDUCTORS SHALL NOT BE SMALLER THAN 2/0 COPPER. ROOFTOP GROUNDING RING SHALL BE BONDED TO THE EXISTING GROUNDING SYSTEM, THE BUILDING STEEL COLUMNS, LIGHTNING PROTECTION SYSTEM, AND BUILDING MAIN WATER LINE (FERROUS OR NONFERROUS METAL PIPING ONLY). DO NOT ATTACH GROUNDING TO FIRE SPRINKLER SYSTEM PIPES.



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